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Agriculture

# Environmental Assessment

## Ward Mt Restoration Project

**Ely Ranger District, Humboldt-Toiyabe National Forest**

**Ely District Office, Bureau of Land Management  
(NEPA# - DOI-BLM-NV-L020-2011-0020)**

Forest  
Service

**Ely Shoshone Tribe, White Pine County, Nevada**

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# **I. Introduction**

The Humboldt Toiyabe National Forest, Bureau of Land Management Ely District and the Ely Shoshone Tribe are proposing to restore native vegetative communities, enhance the diversity of age classes and structure of vegetation communities, restore and improve wildlife habitats, and reduce the severity of wildfires within a project area of approximately 100,000 acres. Within the project area, National Forest System lands consist of (39,264 acres), Bureau of Land Management public lands (53,731 acres), and Ely-Shoshones lands (2,507 acres), within the Egan Range south of Ely Nevada.

This Environmental Assessment (EA) has been prepared to determine whether the effects of the proposed action or alternatives may be significant, and thus, require the preparation of an Environmental Impact Statement. If there are no significant effects determined through this analysis, a Finding of No Significant Impact will be prepared. By preparing this EA, we are fulfilling agency policy and direction to comply with the National Environmental Policy Act of 1969 (NEPA), Indian Affairs NEPA Guidebook 59 IAM 3-H and other relevant Federal and state laws and regulations. For more details of the proposed action, see the “Proposed Action and Alternatives” section.

This document has been prepared jointly between the agencies listed above. Some sections pertain only to one agency which is denoted by the agency listed in parenthesis following the heading.

## **A. Proposed Project Area**

The project area analyzed in this environmental assessment is located on Humboldt Toiyabe National Forest (FS), Bureau of Land Management Ely District (BLM) and Ely Shoshones lands within the Egan Range. The area is located 5 miles south of Ely, Nevada. Nearby small towns are; Ruth, and McGill, Nevada. The area ranges in elevation from 6,700 feet to 10,936 feet. The legal description for the project area is; Township 13 through 16N and Range 61 through 63 E in all or parts of the sections therein (See Figure 1).

The majority of the approximately 100,000 acres within the project area are public lands administered by the FS (~39,264 acres), Ely BLM (~53,731 acres), with other lands being administered by Ely Shoshone Tribe (~2,507 acres), State of Nevada (~814 acres) and private land holders (~5,411 acres).

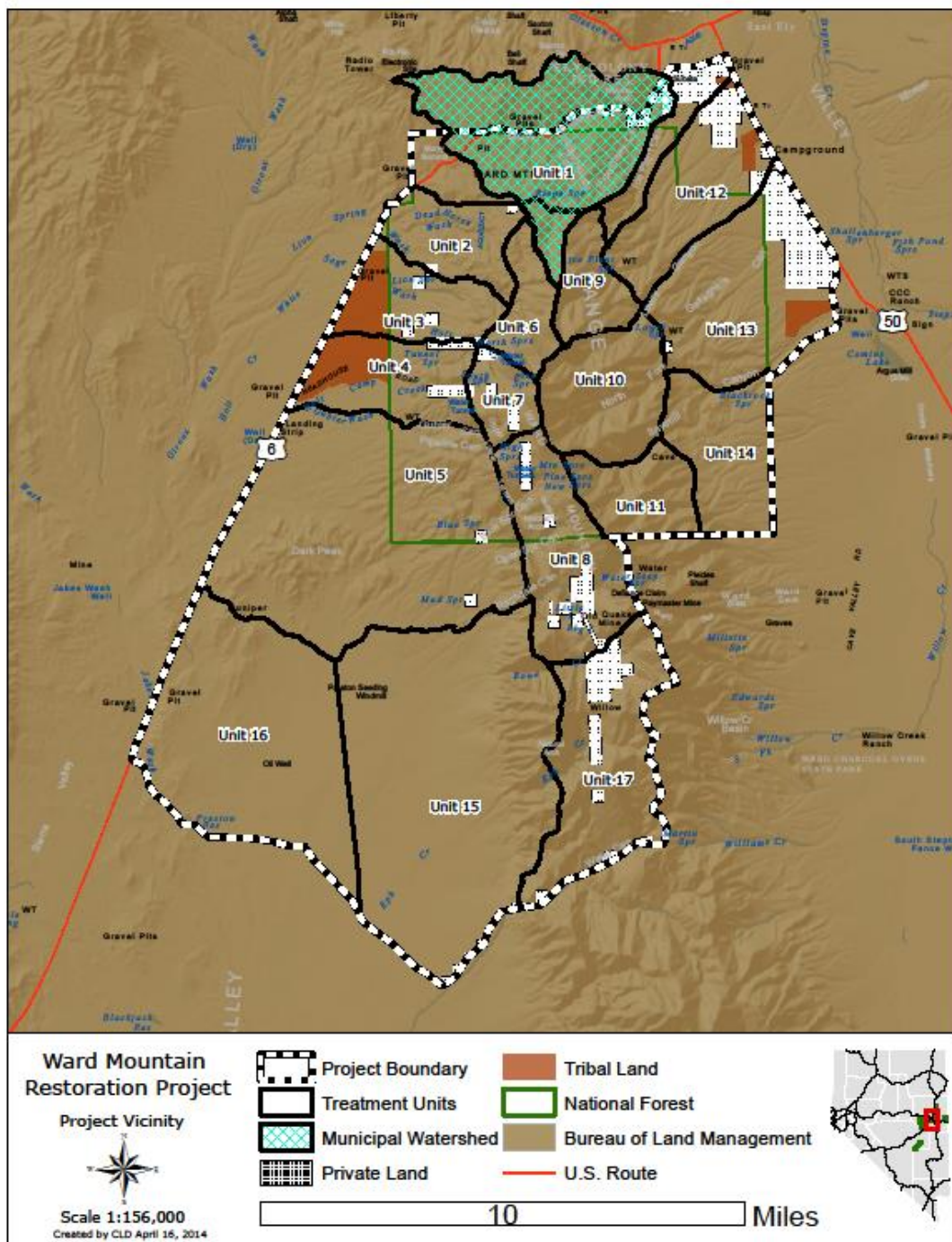


Figure 1 – Ward Mountain Restoration Project vicinity map.

## B. Need for the Proposal

The need for this proposal is due to vegetative communities that have progressed to an abundance of late seral, lower productivity and higher risk vegetative communities within the project area. Past management activities and other impacts including fire suppression, historical livestock grazing practices, historical mining, noxious and invasive weeds, and other land management practices have resulted in undesirable changes to vegetation communities. Changes in ecosystems are putting many important vegetation communities such as aspen (*Populus tremuloides*) and sagebrush (*Atemesia spp.*) at risk of conversion to less diverse communities. Important wildlife habitats for species such as Greater Sage-grouse (*Centrocercus urophasianus*), Mule Deer (*Odocoileus hemionus*) and other sagebrush dependent species are being impacted or lost.

The Fire Regime Condition Class (FRCC) classification is based on a relative measure describing the degree of departure from the reference condition as described within the Biophysical Setting models. This departure is described as changes to one or more of the following ecological components: vegetation characteristics (species composition, structural stages, stand age, canopy closure and mosaic pattern); fuel composition; fire frequency, severity and pattern; and other associated disturbances (e.g. insects and disease mortality, grazing and drought). The three classes are based on low (0-33% departure; FRCC 1), moderate (34-66% departure; FRCC 2) and high (67-100% departure; FRCC 3) departure from central tendency of the natural (historical) regime. Low departure is considered to be within the natural (historical) range of variability, while moderate and high departures are outside the range of variability. The FRCC rating is accompanied by a series of indicators of the potential risks that may result from the changes to the associated ecological components when disturbance is applied. Reference descriptions for a typical FRCC 1 community have been developed for most major vegetation types. Reference conditions are compared to actual conditions for purposes of determining current FRCC classes (Fire Regime Condition Class 2014).

An assessment of the vegetation condition for the Ward Mt Restoration project was completed September 2010 in partnership with Ely BLM, Ely Shoshone Tribe, FS and The Nature Conservancy (TNC). One way to measure the health and resiliency of a vegetation community is to measure ecological departure, as described above. A majority of the proposed project area has been rated at FRCC 2-3 (moderately to highly departed). Figure 2 displays the project area showing the FRCC classes across the ecological systems. This indicates that disturbance regimes have been moderately to highly altered from their historical range. Fire frequencies have departed from historical frequencies by multiple return intervals in some cases. The risk of losing key ecosystem

components is moderate to high. Vegetation attributes have been altered from their respective reference conditions. The 2010 assessment identified areas in need of treatment and those most likely to respond successfully to treatment (The Nature Conservancy). See Figure 2.

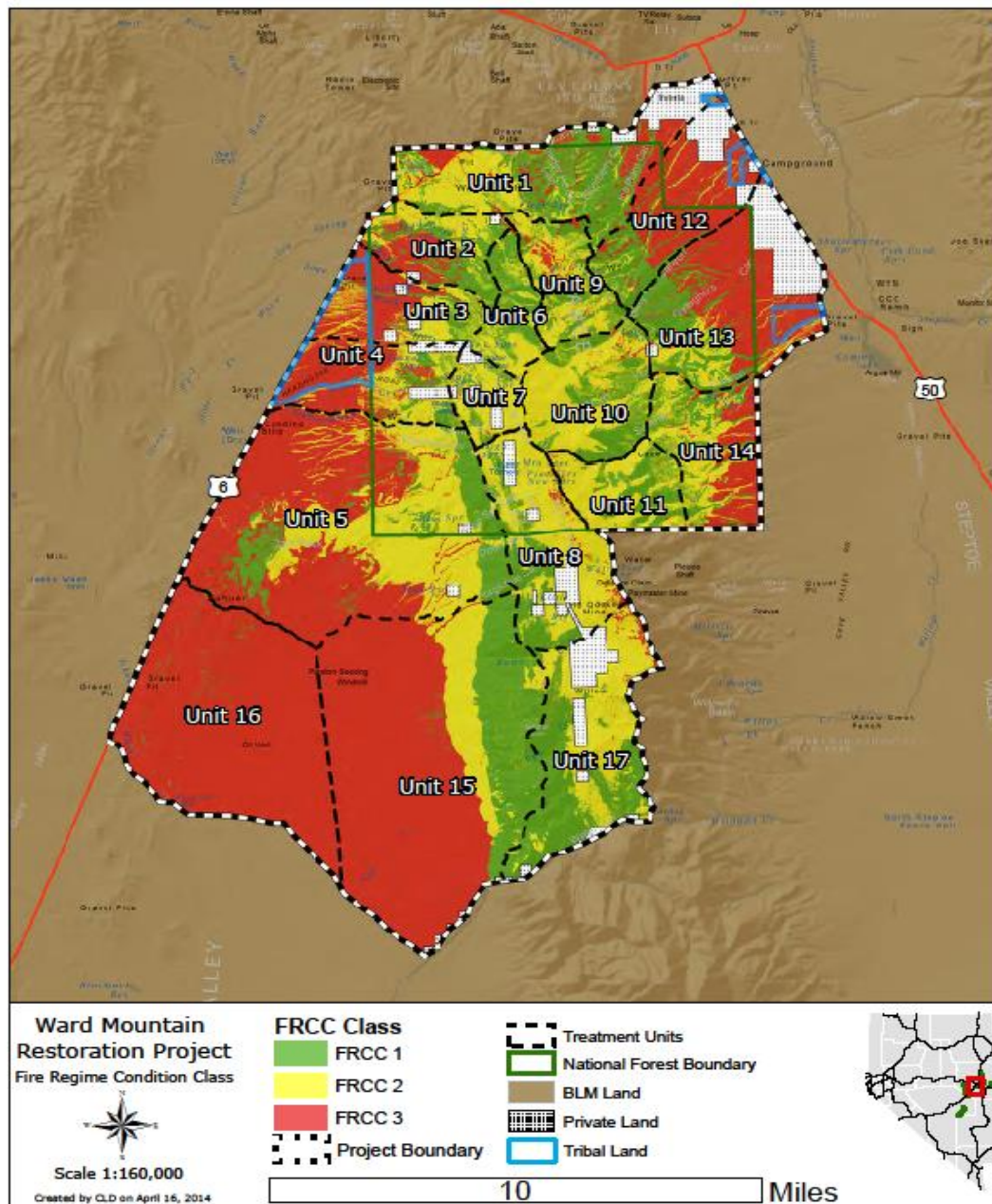


Figure 2 – Ward Mountain Restoration Project are Fire Regime Condition Class

The purpose of this project is to restore and maintain healthy and resilient vegetation communities through reducing departure from the reference conditions. The proposal is being considered in order to achieve the following resource management goals:

- Reduce pinyon and juniper establishment on sagebrush ecological sites in order to improve the overall vegetative composition within the ecological site potential, and improve the health, vigor and production of perennial grass, forb and shrub species;
- Improve the available habitat for sage grouse, mule deer and elk populations;
- Reduce the risk of large, uncontrollable wild fires by reducing fuel loading and continuity within the project area;
- Restore vegetative composition and structure across the landscape that would more closely resemble the historic disturbance regime within the project area; and
- Manage Murray municipal watershed to prevent high severity events and restore ecological stability.

### C. Conformance with existing land use plans

The Proposed Action and Alternative Action are in conformance with, and tiers to the analysis completed for the Ely Proposed Resource Management Plan and Final Environmental Impact Statement (November 2007) the Ely District Record of Decision and Approved Resource Management Plan (August 2008) and the Final Programmatic Environmental Impact Statement (PEIS) – Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (2007) and is consistent with management direction found in the Humboldt National Forest Land and Resource Management Plans (as amended) 1986 and Land Use Plans and Tribal Ordinances related to woodland management.

The Proposed Action and Alternative Action are in conformance with the following Vegetation Resources Goals and Objectives described in the Ely District (BLM) Approved Resource Management Plan:

Goals – Vegetation Resources Manage vegetation resources to achieve or maintain resistant and resilient ecological conditions while providing for sustainable multiple uses and options for the future across the landscape. (Page 26)

Objectives – Vegetation Resources to manage for resistant and resilient ecological conditions including healthy, productive and diverse populations of native or desirable non-native plant species appropriate to the site characteristics. (Page 26)

#### Management Actions – Vegetation Resources (General Vegetation Management)

- VEG-1: Emphasize treatment areas that have the best potential to maintain desired conditions or respond and return to the desired range of conditions and mosaic upon the landscape, using all available current or future tools and techniques. (Page 26)
- VEG-4: Design management strategies to achieve plant composition within the desired range of conditions for vegetation communities, and emphasize plant and animal community health at the mid-scale (watershed level). (Page 26)
- VEG-6: Emphasize the conservation and maintenance of healthy, resilient and functional vegetation communities before restoration of other sites. (Page 27)
- VEG-7: Determine seed mixes on a site-specific basis dependent on the probability of successful establishment. Use native and adapted species that compete with annual invasive species or meet other objectives. (Page 27)
- VEG-17: Integrate treatments to: (1) Establish and maintain the desired herbaceous state or early shrub state where sagebrush is present along with a robust understory of perennial species; and (2) Prioritize treatments toward restoration of sagebrush communities on areas with deeper soils and higher precipitation. (Page 31)
- VEG-18: Manage native range to meet the requirements of wildlife species. Management will focus on maintaining or establishing diversity, mosaics and connectivity of sagebrush between geographic areas at the mid and fine scales. (Page 31)
- Parameter – Riparian/Wetlands Desired Range of Conditions: The Ely District Office is directed to follow the appropriate rangeland health standards. The Northeastern Great Basin Resource Advisory Council states "Riparian and wetland areas exhibit a properly functioning condition and achieve state water quality criteria." In addition to achieving proper functioning condition (PFC), composition, structure and cover of riparian vegetation will occur within capabilities of the site. Ground cover and species composition will be appropriate to the site. (Page 32)
- VEG-23: Promote vegetation structure and diversity that is appropriate and effective in controlling erosion, stabilizing stream banks, healing channel incisions, shading water, filtering sediment and dissipating energy, in order to provide for stable water flow and bank stability. (Page 33)



- VEG-24: Focus management actions on uses and activities that allow for the protection, maintenance and restoration of riparian habitat. (Page 33)

Monitoring – Vegetation Resources Vegetation communities in both treated and untreated areas will be monitored to determine progress toward attaining desired range of conditions. Monitoring to determine success in meeting vegetation management objectives will shift to measuring cover, composition and structure of the community (i.e. the parameters essential for identification of phases within the state and transition model concept). Periodic measurements of vigor and productivity will continue and will utilize standard methodologies (National Research Council 1994; Swanson 2006). (Page 33)

#### Management Actions – Fish and Wildlife (General Wildlife Habitat Management)

- WL-1: Emphasize management of priority habitats for priority species. (See the discussion on Vegetation Resources for the desired range of conditions for the various vegetation communities. (Page 35)
- WL-6: Where appropriate, restrict permitted activities in big game calving/fawning/kidding/lambing grounds and crucial summer range from April 15 through June 30. (Page 35)
- WL-8: Focus restoration projects initially in priority habitats (i.e., calving/fawning/kidding/lambing grounds, crucial summer range, and crucial winter range), and then in other seasonal habitats within a watershed. (Page 35)
- WL-9: Manage elk habitat by implementing the actions and strategies identified in the Central Nevada, Lincoln County, and White Pine County Elk Management Plans that the Ely District Office has the authority to implement, and that are consistent with watershed restoration strategies. (Page 35)

Monitoring – Fish and Wildlife - Baseline wildlife use patterns and estimated population levels will be calculated using information collected annually by the Nevada Department of Wildlife. These will be compared with post-treatment use patterns and population numbers to determine relative effectiveness of watershed restoration. Forage production will be monitored on an allotment basis during livestock allotment evaluations. Annual livestock and wild horse utilization records gathered by Ely District Office staff and wildlife observations reported by the Nevada Department of Wildlife and Ely District Office will be used to determine possible issues. Conflicts between livestock, wild horses, and wildlife will be resolved during the assessments and subsequent management actions including appropriate management level adjustments in herd management areas, cooperative habitat management actions with Nevada Department of Wildlife, and

grazing permit renewals. Impacts to wildlife populations will take into account changes in herd management objectives as set by the Nevada Department of Wildlife.

## D. Relationship to Statutes, Regulations, or other Plans (BLM)

The Ward Mountain Restoration Plan is in conformance with the following:

- White Pine County Public Lands Policy Plan (2007 Revision) Policy 9-5: Identify habitat needs for wildlife species, such as adequate forage, water, cover, etc. and provide for those needs so as to, in time, attain appropriate population levels compatible with other multiple uses as determined by public involvement. (Page 27)
- White Pine County Elk Management Plan (2007 Revision) the plan was developed by the White Pine County Elk Management Technical Review Team (TRT). The plan identified vegetation conversion projects by Nevada Department of Wildlife (NDOW) management units that would improve wildlife habitat by creating a more diverse mixture of grasses, forbs and shrubs. The project area lies within NDOW Management Unit 221.
  - Policy 9-5 (page 17) "Identify habitat needs for wildlife species, such as adequate forage, water, cover, etc., and provide for those needs so as to, in time, attain appropriate population levels compatible with other multiple uses as determined by public involvement."
  - Policy 9-7 (page 18) "Support habitat restoration to improve wildlife habitat when compatible with other uses."
- White Pine County Sage Grouse Conservation Plan (2004) The plan was developed by a Coordinated Resource Management Steering Committee comprised of the State of Nevada, the Forest Service, the National Park Service, the Bureau of Land Management, private property owners, Native American tribes and the public. The following strategies have been identified under "Goals, Objectives and Strategies" of the plan:
  - Strategy 2.2.3 (page 21) "Identify all sagebrush communities that are now dominated by pinyon-juniper or where pinyon-juniper is becoming established and prioritize for projects."
  - Strategy 2.2.4 (page 21) "Increase the amount and improve condition of sagebrush habitats by implementing projects suggested by and agreed to by local planning groups."
  - Strategy 3.1.9 (page 21) "Identify decadent sagebrush stands and apply management treatments to replace the decadent sagebrush with young, healthy, robust plants."
  - Strategy 3.2.1 (page 22) "Identify all sagebrush sites that have become dominated by pinyon and juniper and prioritize for projects."



- Strategy 3.2.3 (page 22) "Use all appropriate means (e.g., fire, mechanical, chemical, etc.) to treat pinyon and juniper sites that have the potential to support sagebrush habitats."
- Strategy 3.2.4 (page 22) "Use all appropriate means (e.g., fire, mechanical or chemical methods) to treat senescent or degraded sagebrush communities to restore age class diversity."
- Strategies 3.3.1 (page 22) "Properly implement the Ely BLM District Managed Natural and Prescribed Fire Plan to benefit the ecological processes and systems associated with healthy sagebrush communities."
- Strategy 4.2.7 (page 23) "Propose, plan and design habitat treatments for the benefit of multiple species, including sage grouse." Northeastern Great Basin Resource Advisory Council Standards and Guidelines (1997) "Habitats exhibit a healthy, productive, and diverse population of native and/or desirable plant species, appropriate to the site characteristics, to provide suitable feed, water, cover and living space for animal species and maintain ecological processes. Habitat conditions meet the life cycle requirements of threatened and endangered species."
- Land Use Plans and Tribal Ordinances (Ely Shoshone)

## E. Scoping, Public Involvement and Issues

Through the scoping process, the public and other agencies identified concerns in response to the Proposed Action. Identification of issues included reviews of written and verbal comments, input from FS and BLM resource specialists, review of the Forest Plan (FS) and Resource Management Plan (BLM), and comments from state, federal agencies and tribal governments. Comments identified during scoping were evaluated against the following criteria to determine whether or not the concern would be a major factor in the analysis process.

- Has the concern been addressed in a previous site-specific analysis, such as in a previous Environmental Impact Statement or through legislative action?
- Is the concern relevant to and within the scope of the decision being made and does it pertain directly to the Proposed Action?
- Can the concern be resolved through design criteria (avoiding, minimizing, rectifying, reducing or eliminating, or compensating for the proposed impact)?

Although a number of concerns and potential issues were noted during scoping and the analysis, no unresolved resource conflicts were identified.

All comments, and issues raised during the various scoping periods have been addressed and those documents have been included in the project record for the Ward Mountain Restoration Project.

## **II. Proposed Action and Alternatives**

The Humboldt Toiyabe NF, Ely District BLM and the Ely Shoshone Tribe explored and objectively evaluated all reasonable alternatives that met the underlying need for the Proposed Action. The following will present the alternatives as well as compare and contrast them in relation to each other. The purpose and need will form the baseline for which alternatives are developed. There are no action alternatives that were carried forward for analysis in response to unresolved conflicts regarding available resources on public lands, as such there is one action alternative proposed. The No Action Alternative is provided for baseline comparison of the impacts of the Proposed Action

### **A. Proposed Action**

The proposed action would use mechanical treatments, chemical treatments and prescribed fire to restore vegetative communities, enhance the diversity of age classes and structure of vegetation communities, restore and improve wildlife habitats, and reduce the potential severity of wildfires within the proposed project area of approximately 100,000 acres.

The agencies and tribe propose to conduct vegetation treatments on areas within the Ward Mountain Restoration Project Area (See Figure 3). The targeted areas for treatments would include areas identified in the Ward Mountain Restoration Project Assessment (The Nature Conservancy 2010) where vegetation has departed from the reference condition as described within the applicable Biophysical setting model. Major dominant communities where the proposed action would take place include Aspen Mixed Conifer, Aspen Woodland, Basin Wildrye, Black Sagebrush, Montane Sagebrush Steppe-Mountain, Montane Sagebrush-Upland, Winterfat and Wyoming Big Sage. Within the proposed project area (100,000 acres), approximately 42,670 acres are proposed for treatment.

#### *1. Treatment Methods*

Treatment methods proposed within the Ward Mountain Restoration Project Area include a variety of methods as needed to meet the objectives of the treatments within the specified vegetative communities. Within the proposed project area and corresponding treatment units a variety of treatment methods may be employed.

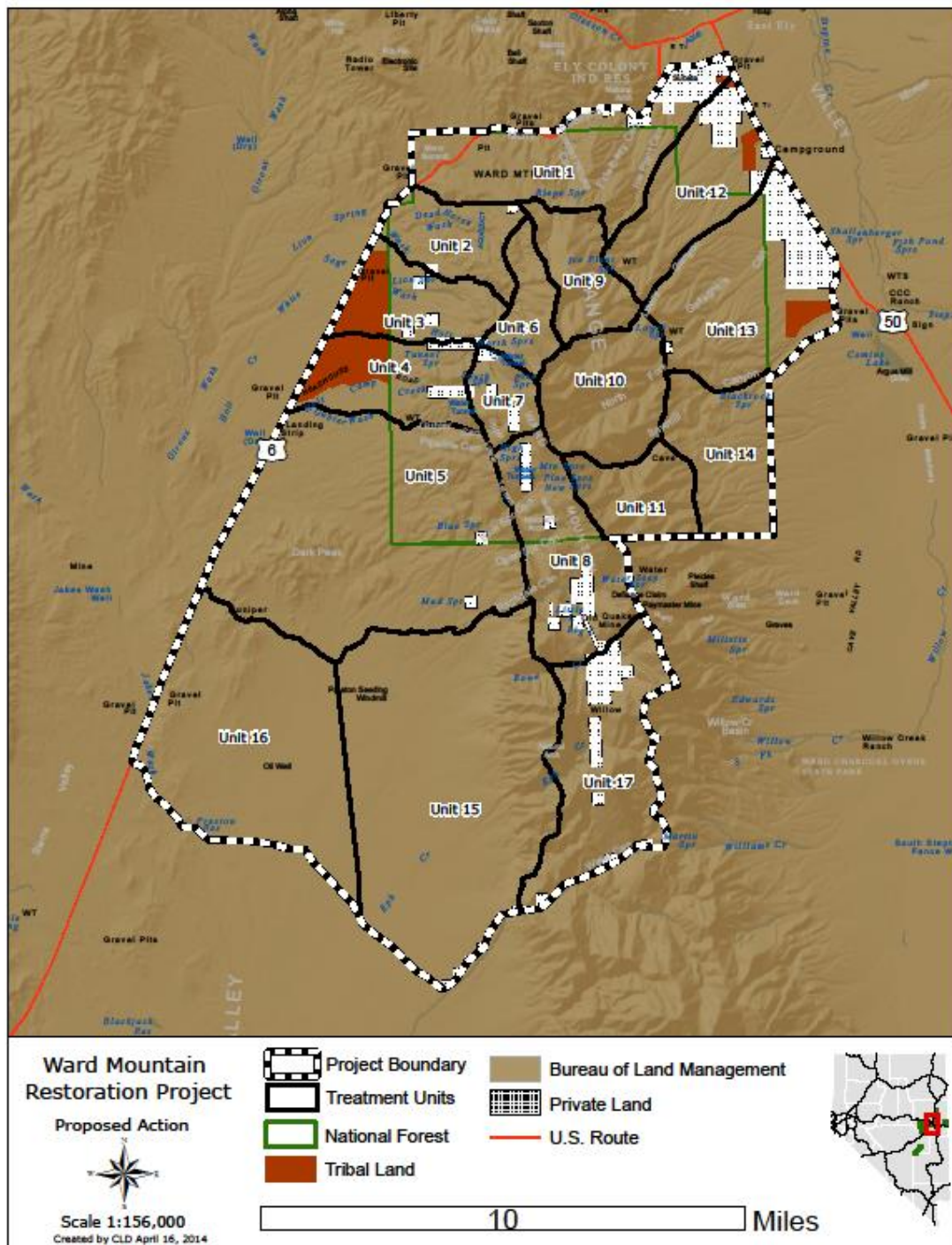


Figure 3 – Ward Mountain Restoration Project Treatment Units

a) Mechanical Treatment Methods

(1) *Dixie Harrow*

The Dixie harrow consists of a large spike-tooth harrow pulled by a four-wheel drive rubber-tired tractor equipped with a three-point hitch. The Dixie harrow is used in sagebrush or other small shrub stands and offers a high degree of control. Factors such as the pattern of treatment, residual density of sagebrush, seeding, and timing can all be controlled. Sagebrush mortality levels can be adjusted through the removal or addition of tines. Mechanical removal of pinyon pine (*Pinus monophylla*) and juniper (*Juniperus osteosperma*) may be utilized to remove the trees prior to treatment, as opposed to avoiding them. Seeding can be conducted within the same pass as the treatment with the use of a broadcast seeder attached to the back of the equipment pulling the Dixie harrow or seed may be applied with other methods prior to or following the harrow treatment. Any biomass resulting from this treatment would be left on site for natural decomposition.

(2) *Roller Chopper*

Roller chopper treatment involves the use of a large drum with paddles attached that is pulled behind a piece of machinery such as a tractor or bull dozer. The weight of the drum can be adjusted through the addition of water to the drum. The treatment crushes and chops brush and small trees. Seeding can be conducted within the same pass as the treatment with the use of a broadcast seeder attached to the back of the equipment pulling the roller chopper or seed may be applied with other methods prior to or following the roller chopper treatment. Any biomass resulting from this treatment would be left on site for natural decomposition.

(3) *Mowing*

Mowing involves the use of a mowing deck pulled behind a tractor equipped with a power take-off. Its use would be limited to sagebrush and other small shrubs in areas that have fairly gentle terrain and with minimal large rocks or downed trees. Within these units, hand cutting of trees may be utilized to remove the trees as opposed to avoiding them. Any biomass resulting from this treatment would be left on site for natural decomposition.

(4) *Chaining*

Chaining would be accomplished using the Ely Anchor Chain (Navy ship anchor chain with 40-120 pound links and 18 inch railroad iron welded perpendicular to the chain link)

and/or smooth chain (chain with 40-120 pound links) pulled between two bulldozers. Chaining treatments would consist of one or two-way chaining (chaining the treated area twice, once from one direction, then from a different direction). Islands of untreated vegetation would be left to provide escape and thermal cover for wildlife. Areas that are chained would be seeded prior to completing the final pass. Biomass may be left on site for natural degradation, treated with a secondary treatment (i.e. prescribed fire) or may be made available for removal and use after the implementation of the treatment.

Chaining would be used where decadent sagebrush and heavy to moderate establishment of pinyon pine and juniper are reducing the proportion of younger brush, grasses, and forbs within an area. Chaining incorporates seed into a diverse seedbed to promote re-vegetation of the area. In addition to seed applied through an aerial method, seed dribblers attached to the track of the bulldozer can be used to press antelope bitterbrush (*Purshia tridentata*) seed into the soil to promote establishment.

Chaining would not be used in areas where selective tree removal is needed to meet objectives and chaining treatments would be designed to avoid established stands of mountain mahogany. For the purpose of removing pinyon pine and juniper trees and maintaining sagebrush communities, chaining would not be a desirable method in areas with less than 10% tree cover. Chaining would be preferred on slopes of less than 20%, however may be considered on slopes up to 30%.

#### *(5) Mastication or Mulching*

Mastication or mulching of pinyon pine and juniper usually includes a cutting head attached to a piece of machinery from the size of a light duty skid steer or larger. Machinery that severs the tree and piles them may also be used to remove the biomass from the site to be disposed of or utilized off site. The cutting heads can be of various designs, some of which chip the tree, cut and pile the tree, and others that cut, lop, and scatter the tree. The potential for biomass removal would depend on the type of method used. Biomass, including fuel wood and chips, would be made available for public use to the greatest extent possible. Biomass created from whole-tree cutting methods may be consolidated into piles and disposed of later through prescribed burning. Biomass created from mastication or mulching equipment would be left onsite to degrade by natural means. Scatter height of cut limbs and trees for areas treated would be a maximum of 24 inches.

Following treatment, the site would be inspected to determine if excess biomass left onsite in certain locations would restrict movement for sage grouse and other wildlife. If

this occurs the biomass within these areas would be removed through burning or mechanically.

Mastication or mulching selectively removes trees (thinning areas or areas with desirable tree species intermixed) with minimal impact to existing brush, grasses and forbs. This method can incorporate some seed and prepare a seed bed in areas, but only where the equipment travels. Mastication or mulching may be effective in areas where tree densities fall below the cover threshold for chaining. Chipping equipment is preferable in areas where remaining biomass is to be minimized (chips versus whole trees). Whole-tree cutting methods can be utilized for biomass removal and utilization.

When using this method, chip layers resulting from mastication should be restricted to six inches or less. Mastication or mechanical tree removal would be restricted to slopes appropriate for the machinery and head being used. If biomass is to be removed from the project site, cross country travel by equipment would occur to access the site for loading and vegetation removal prior to authorization.

Off-road travel with heavy equipment would occur during the tree thinning activities. Loading and unloading any equipment would occur on existing roads to minimize off-road disturbance and impacts. If determined necessary, signs would be posted along roads within or adjacent to the treatment areas in regards to travel restrictions in order to assist in mitigating impacts from future cross country travel.

#### *(6)Chainsaw lopping*

Chainsaw lopping would involve the use of crews to selectively hand cut the trees within the treatment area. Trees would be lopped and scattered across the treatment area or piled. Cut tree material in sage-grouse habitat would be scattered or piled next to the tree bole to allow movement of sage-grouse through or around the area. Remaining biomass may be left on site, removed for utilization, or burned. Scatter height of cut material for areas treated with hand cutting would be a maximum of 24 inches. Following treatment, the site would be inspected to determine if excess biomass left onsite in certain locations would restrict movement for sage grouse and other wildlife. If this occurs the biomass within these areas would be piled/broadcast burned or removed mechanically. Hand cutting may be used as a pre-treatment or as a component of other treatments.

Hand cutting selectively removes trees (thinning areas, areas with desirable tree species intermixed, or buffering sensitive resources) with minimal impact to existing brush, grasses and forbs. It may also be an effective method in areas where tree densities fall below the cover threshold for chaining or where slope restricts the use of chaining,

mastication, and other mechanical methods. Any slash created from hand cutting that is to be scattered would have a maximum height of 24 inches. Hand cutting is not effective at incorporating seed or preparing a seed bed.

b) Chemical Treatments

On lands administered by the BLM chemical treatments would be implemented in accordance with the specifications listed on the label for the chemical being used and the Final Programmatic Environmental Impact Statement (PEIS) – Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (2007) and associated Record of Decision and standard operating procedures listed in those documents. Agency and contractor personnel involved with the application of pesticide would be appropriately licensed as required by the EPA, BLM, and the state of Nevada. Equipment utilized for application would be properly equipped and calibrated for dispensing the herbicide. For aerial applications of herbicide the pilot would be required to have a current Nevada pesticide applicator's license and the aircraft would need to be equipped to precisely dispense the herbicide. The applicator would also be required to have a current Nevada pesticide applicator's license for restricted herbicides. A Pesticide Use Proposal (PUP) would be completed and authorized prior to completing the treatment on BLM lands. Standards and guidelines for storage facilities, posting and handling, accountability and transportation as listed in BLM Handbook 9011 (Pesticide Storage, Transportation, Spills and Disposal) Section II would be followed. Items listed in the Material Safety Data Sheets (MSDS) provided for all chemicals used would also be adhered to.

On lands administered by the Forest Service, these treatments would follow the direction of the Noxious Weed Control Program on Humboldt-Toiyabe National Forest, Elko, White Pine and Humboldt counties, NV EA, May 1996 for the treatment of Noxious and Invasive weeds. There would be no use of aerial treatments on Forest Service lands.

On lands administered by the Ely Shoshone, herbicide use would be limited to small areas, conducted with certified applicators in accordance with the product label instructions.

*(1) Tebuthiuron*

On lands administered by Ely BLM, Tebuthiuron is a pesticide used to control woody species and may be applied in accordance with all applicable federal, state and local laws, regulations and guidance. The preferred time of application would be during the fall prior to the first snow fall, however, the herbicide may be applied any time as long as the

ground is not frozen, water saturated, or snow covered. Treatments would be conducted during calm weather conditions to avoid herbicide (pellet) drift.

Tebuthiuron is proposed to treat big sagebrush for the purpose of reducing late seral classes to restore mid-succession vegetation classes within the Basin Wildrye (loamy bottom) biophysical setting model (wm1080bw) as described and mapped within the Ward Mountain Restoration Project report prepared by The Nature Conservancy (2010). This treatment would reduce sagebrush cover in a spotty and mosaic fashion. Tebuthiuron would only be applied to sites that exhibit at least 10 percent relative cover of desirable understory herbaceous species with a minimal amount of invasive species present.

Tebuthiuron may be used in areas that terrain limits other mechanical treatments. However, Tebuthiuron should not be used in areas that have soils with clay content greater than 30% or that have surface water or an elevated groundwater level. Treatments should be designed to avoid established stands of mountain mahogany.

On lands administered by FS, Tebuthiuron may be used for selective treatments of pinyon-juniper and would not be used to treat sagebrush communities.

Biomass remaining after the effects of the herbicide are realized may be left on site for natural decomposition, treated with prescribed fire, or made available for fuel wood. If made available for fuel wood, the Safety Data Sheet and any other applicable information must be reviewed to ensure the safety of combustion of wood that has absorbed the chemical and must be made available to the public.

## *(2) Cheatgrass treatment*

Herbicides and/or targeted grazing may be utilized to suppress Cheatgrass (*Bromus tectorum*) within the treatment areas identified. Herbicides selected would be used in accordance with the approved label and handled in accordance with the safety data sheets. Herbicides may include but are not limited to imazapic, glyphosphate, sulfometuran methyl and chlorsulfuron. Cheatgrass treatments may be employed to treat existing stands and to prevent the establishment within treated areas. Treatments may be made as either a broadcast treatment or spot treatment.

### c) Prescribed Fire

Prescribed fire may be used to control certain species, manage fuel loading, and maintain vegetation community types that are fire dependent, and enhance growth, reproduction,



or vigor of certain species. Target locations would be chosen in sites with existing native perennial understory species. These target areas would exhibit characteristics where positive natural re-establishment of native grasses and favorable establishment of seeded grasses are most likely to occur. Given the presence of a healthy and diverse understory of native perennial species and a lack of non-native invasive plant species, it is less likely that invasive plants would establish in these areas.

Prescribed fire may be used as a secondary treatment to achieve the objectives listed for individual treatment areas. Prescribed fire may also be used to reduce biomass left on site. Ignition would be strategically timed to best reduce fuel hazards to acceptable levels and benefit ecological system health. Fuel moistures and atmospheric conditions would be closely monitored prior to ignition to achieve the specific levels of fire severity targeted within the objectives and burn plan, maintain the greatest degree of control possible, and prevent adverse impacts from smoke.

Prescribed fire treatments maybe a combination of ground and aerial firing (ignition) resources would be used to implement the prescribed burn. Ground firing resources would include drip torches and terra torch where applicable. Clean up and control would also be conducted with the use of drip torches and/or terra torch. Aerial fire application would be through the use of a Plastic Sphere Dispenser (PSD) machine or helitorch. Aerial fire application would improve efficiency and effectiveness. Safety, fuels properties, current and expected weather, topography (ingress/egress), and holding capabilities would determine the proper fire application. Drainage bottoms would be avoided, where possible, and mosaic patterns would be preferred to block patterns.

An approved burn plan would be prepared prior to the implementation of prescribed fire. Control lines for prescribed fire would utilize natural barriers as much as possible. In the event natural barriers cannot be utilized, tree and shrubs may be cut and removed along prescribed fire boundaries. Vegetation removal may include any of the mechanical treatments described above. Vegetation removed along the control line would be piled inside the prescribed fire boundary and burned during the firing operations. In some cases control lines would include scraping and/or digging to expose mineral soils. If control lines are constructed for a prescribed burn, the lines would be rehabilitated after the completion of the burn. Rehabilitation of the lines may include seeding (by hand or ATV), dragging brush back onto the line, and/or water-barring the fire line.

Prescribed fire may be used in areas where reducing the shrub and/or tree component is desirable to release other desirable vegetation (aspen, grasses, forbs, etc.) and in areas that have good understory that could regenerate naturally and respond positively to the

burned area. It may also be used in areas with varying terrain. Boundaries would be designed to avoid sage grouse breeding habitat and to buffer any known cultural sites that are susceptible to damage from heat or smoke. Prescribed fire may be used as a secondary treatment to further reduce the shrub or tree component to achieve the desired mosaic pattern and percentages of seral states listed within the objectives for each treatment area.

On lands administered by Ely BLM, prescribed fire that moves outside of the prescribed burn project boundary but remains within the Ward Mountain Restoration Project boundary, except for the WUI FMU's may be managed to accomplish resource management objective consistent with those listed for the treatment unit.

d) Seeding

Seeding may occur in areas where the interdisciplinary team determines that existing understory vegetation is not sufficiently abundant (generally in areas with less than 10% relative cover of perennial grass and forb species). Seeding would be conducted on the treated sites during the fall or early winter months, preferably prior to snow fall. Seed mixes may consist of a variety of native grasses, forbs, and shrubs as well as non-native perennial species that are able to successfully compete with invasive annuals (e.g., cheatgrass) and are adapted to site characteristics.

Preference would be given to using a purely native seed mix, however if it is determined that recurring wildland fire, invasive species establishment, or site characteristics may prevent achieving the treatment unit objectives, non-native perennials may be utilized to reduce these threats. Native seed components of seed mixes would be determined through reviewing the ecological site descriptions for the treated areas to determine common species with a high probability of success towards accomplishing the desired objectives.

Seeding would occur through aerial application, ground application with the use of a rangeland drill, broadcast with a tractor or ATV, or applied by hand. Seeding with a rangeland drill would be restricted to slopes less than 20% and where stone content of the soil permits the effective use of the drill. All areas that are chained for the purpose of pinyon pine and juniper removal would be seeded. Chainings would be seeded aurally prior to the completion of the final pass of equipment. Dribblers may be attached to the bull dozers during chaining to seed antelope bitterbrush. Other mechanical treatments for pinyon pine, juniper, or sagebrush may have seed applied prior to the treatment occurring. Areas that are to be treated with chemicals would be seeded after the

application of the herbicide in most cases and would be determined by the specification and recommendations of the label.

e) Fencing

Fencing may be required to restrict livestock from entering treated areas and/or to restrict all large ungulate (wild and domestic) on treated areas in highly sensitive location such as aspen stands and riparian areas. All fences for the purpose of restricting all ungulate herbivory on treated areas would be temporary in nature and would remain in place only until the objectives are met. Aspen stands may be fenced in order to prevent herbivory of young aspen within the stand. Fencing would be constructed of eight-foot steel pipe rail fencing, electrical fencing, traditional barbed wire fencing, pole fencing, or a slash barrier fencing designed to keep elk, deer, cattle, and/or domestic sheep out of the treatment area. The fence would be left in place until regeneration objectives are met.

Steel pipe rail fencing consists of four rails, is self-supporting, non-reflective, and requires no ground disturbance during installation. Electrical fencing may be used as a cost-effective fencing alternative that meets the objectives. Electric fencing would typically be three or four strands attached to a fiberglass or metal pole to a height of five or six feet. Corner posts would be constructed of wood. The fencing would be solar powered with a battery box to store electrical charge. The box containing batteries would be camouflaged to the surroundings to the largest degree possible. Electrical fencing would be used until objectives are met and then made available to reuse in other locations.

Fencing would be placed on site in such a way that visual impacts would be minimized to the fullest extent practicable.

f) Non-native Invasive and Noxious Species

Stipulations identified in the Weed Risk Assessments and the Ely District Integrated Weed Management Plan and Environmental Assessment (DOI-BLM-NV-L000-2009-0010-EA) and Noxious Weed Control Program on the Humboldt-Toiyabe National Forest for Elko, White Pine-Humboldt counties in NV, May 1996 would be carried out at the time of implementation within each treatment unit.

On lands administered by the BLM, treatments would include best management practices for early detection and treatments to control current populations and any new weed populations discovered during the life of the project. Treatments could include biological

controls, targeted grazing, hand pulling, prescribed fire, mechanical controls and herbicide. For biological controls only the release of U.S. Department of Agriculture (USDA) - Animal and Plant Health Inspection Service approved insects or pathogens would be used and would be accompanied by a BLM Biological Control Agent Release Proposal. Any herbicide treatments would require a Pesticide Use Report submitted to the BLM Nevada State Office following implementation. Herbicide treatments for weeds would include the potential use of all BLM approved herbicides and surfactants, both in the BLM Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (EIS) and Record of Decision (BLM 2007), and any herbicides approved in the future using the protocol for identifying, evaluating, and using new herbicides as described in that EIS.

Targeted grazing would only be used to suppress large patches of cheatgrass that are hindering successful recovery of desired plant species. Sheep, cattle, or goats may be used as long as the animals are intensely managed. Timing restrictions would apply when using targeted grazing to reduce impacts to desired plant species. Targeted grazing would only be allowed during early spring green up when cheatgrass has emerged and other desired grasses are mostly dormant, or in the fall after desired grasses and forbs become dormant.

g) Wildland Fire for Resource Benefit and the Fire Management Plan

The Ward Mountain Restoration Project boundary intersects six Fire Management Units (FMUs) as defined by the current Humboldt-Toiyabe National Forest Fire Management Plan (2014) and the updated (2011) Ely District Office BLM Fire Management Plan (FMP). The BLM FMUs within the watershed are categorized into Wildland Urban Interface (WUI) and High Value Habitat (HVH) with varying constraints placed on acceptable wildfire size and the FS are categorized as Central Mixed Suppression and Central WUI Suppression. Wildland fire for resource benefit is allowed by the FMP's in all of the FMUs except the Ely/Lund/Duckwater WUI, the Ely/Lund Watershed WUI and Central WUI Suppression FMUs. Wildland fire for resource benefit would be allowed as prescribed within the administering federal agencies current FMP's.

On lands administrated by Ely Shoshone tribe, place highest priority on the allocation of available suppression forces to fires threatening sites in the Asset Protection Unit-Wildland Urban Inter face (APU).

If ignitions are to be considered for wildland fire for resource benefit within the Ward Mountain Restoration Project area, the mechanical and prescribed fire treatment methods identified within the Proposed Action may be implemented as part of the fire

management strategy. In the case of a wildland fire for resource benefit, the administering agency would inform the potentially impacted landowners within the area as to the objectives and strategy being employed. Ignitions within or adjacent to the designated treatment units would be considered for wildland fire for resource benefit if conditions are appropriate for the fire to accomplish the objectives listed for the treatment unit.

On lands administrated by Ely BLM the targets for individual fire size would remain the same as identified for each of the FMUs. Decadal acres allowed within the Ward Mountain Restoration Project portion of the Highlands and South Egan FMU would be 3,000 acres (Table 1). Decadal acres allowed within the Ward Mountain Restoration Project portion of the Northern Benches FMU would be 15,000 acres. The acreage adjustments are to allow wildland fire for resource benefit within the treatment areas as well as consideration for ignitions outside of the treatment units where fire could be allowed to be reintroduced to the landscape.

Table 1 – BLM Wildland Fire for Resource Benefit Targets.

(BLM) Fire Management Unit Name	Percent of total FMU*	Wildland Fire for Resource Benefit Targets			
		Individual Wildland Fire for Resource Benefit	Decadal Acres		
			FMP Total Acres	Ward Mtn Proportional Acres	Proposed Ward Mtn Acres
<b>Highlands and South Egan (BLM)</b>	2%	50,000	100,000	2,000	3,000
<b>Northern Benches (BLM)</b>	2%	5,000	300,000	6,000	15,000
*Represents the percent of the FMU that occurs within the Ward Mountain Restoration Project are and is used to calculate the proportional acres listed in the table.					

## 2. *Design Features:*

### a) Wildlife:

#### *(1) Sagebrush Restoration Guidelines for Greater Sage-Grouse Habitat Requirements*

#### Goals:

The short and long term goals for sagebrush restoration are to conduct them in such a way, that treatments do not negatively affect greater sage-grouse populations. Restoration of sagebrush communities are intended to improve habitat conditions for all seasonal habitats and life stages of the greater sage-grouse. The agencies would coordinate closely with NDOW on all sagebrush treatments and restoration techniques to help ensure restoration will be beneficial to greater sage-grouse.

#### Objectives:

Table 2 outlines the habitat objectives for greater sage-grouse as proposed in the Draft Nevada and Northeastern California Greater Sage-Grouse Land Use Plan and Environmental Impact Statement (September 2013). These objectives are based on research conducted in Nevada and considered to be the highest quality seasonal habitat for greater sage grouse. The habitat objectives do not depict what is and is not being used by sage grouse, but outlines the characteristics of seasonal habitats that sage grouse are using most successfully in Nevada (Sagebrush Ecosystem Program 2013). These guidelines would be used to help determine if treatments are accomplishing greater sage-grouse habitat objectives. The goal is to incorporate a mosaic of nesting, brood-rearing/summer, and winter habitat throughout the watershed to meet sage grouse life cycle needs.

Table 2 Habitat Objectives for Greater Sage-grouse.

Habitat Indicator	Objective	Sources
LEK		
Availability of sagebrush cover	Has adjacent sagebrush cover	Connelly et al. 2000 Blomberg et al. 2012
NESTING		
Sagebrush canopy cover (%)	$\geq 20$	Kolada et al. 2009a Kolada et al. 2009b
Perennial grass cover (%)	$\geq 10$ if shrub cover $< 25^2$	Coates et al. 2011 Coates and Delehanty 2010
Annual grass (%)	$< 5$	Blomberg et al. 2012
BROOD-REARING/SUMMER		
Sagebrush canopy cover (%)	$\geq 10$	Connelly et al. 2000
Perennial forb canopy cover (%)	$\geq 10$ mesic	Casazza et al. 2011
Perennial forb availability (riparian areas/meadows)	$\geq 5$ plant species present <sup>3</sup>	Casazza et al. 2011
WINTER		
Sagebrush canopy cover (%)	$\geq 10$	Connelly et al. 2000
Sagebrush height (cm)	$\geq 25$	Connelly et al. 2000

<sup>1</sup>Upland standards are based on indicators for canopy and ground cover, including litter, live vegetation, and rock, appropriate to the ecological potential of the site.

<sup>2</sup>Assumes upland rangeland health standards are being met.

<sup>3</sup>Standard considered in addition to PFC. Measured ESD/Daubenmire (25cm X 50cm frame). Includes all mesic plant species, not only perennial forbs.

#### Treatment Guidelines:

1. Make pinyon and juniper removal from sagebrush biophysical settings (BpS)<sup>1</sup> a priority over conducting sagebrush treatments in the project area, prioritizing conifers established within nesting and winter habitat  $< 5\%$  (Casazza et al. 2011).

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<sup>1</sup> The Biophysical Settings (BpS) layer represents the vegetation that may have been dominant on the landscape prior to Euro-American settlement and is based on both the current biophysical environment and an approximation of the historical disturbance regime.

<http://www.landfire.gov/NationalProductDescriptions20.php>.

2. In coordination with NDOW, determine and document the purpose and need for the treatment. Treatments would not be conducted within greater sage-grouse habitats until vegetation communities have been assessed to determine whether: a) the subject area(s) is not meeting desired habitat conditions (see Table 2 above), and b) the area(s) would have a high rate of success (desired vegetative response to treatment). Livestock grazing, as well as big game populations, would be considered during site analysis to determine if treatment area would have a high success rate.
3. Only 20% of sagebrush (Preliminary General Habitat/Preliminary Priority Habitat (PPH/PGH)) would be treated in any given watershed. Any treatment reducing sagebrush canopy cover to less than 15% would be considered disturbance for future disturbance calculations (adapted from Connelly et al. 2000, Stiver et al. 2010). Once vegetation cover has recovered to meet or exceed the levels described in Table 2 above the treated area may be released from the 20 % calculation. Sagebrush treatments do not include the removal of pinyon and juniper trees from PGH or PPH.
4. Prior to all treatments, vegetative conditions would be re-evaluated within the watershed to determine whether new disturbances (wildland fire, treatments, etc.) have removed usable sage grouse habitat and should be incorporated into the 20% calculation. It would also determine if past sagebrush treatments or wildfires can be released from the 20% because they now provide useable sage grouse habitat (criteria in Table 2 above). Additionally, pinyon and juniper removal treatments with sagebrush communities may be added to the total treatable acreage because it became useable greater sage-grouse habitat.
5. To reach desired vegetative goals, use adaptive management to a) determine if additional treatment applications are needed as part of the treatment regimen, and b) adjust treatment designs or methods employed in future treatments.
6. Treatments should not be implemented within 4-miles of any occupied lek from March 15 through June 30 during the breeding and nesting season (Wyoming Game and Fish Department 2011).
7. Prescribe fire would not target habitat dominated by black sagebrush (*Artemisia nova*) or Wyoming big sagebrush (*Artemisia tridentata* spp. *Wyomingensis*) (Connelly et al. 2000). Fire would be considered in higher elevation mountain big sagebrush communities where conifers are establishing.
8. Generally, treatments should be conducted in a mosaic of meandering strips 4 to 8 meters wide with untreated strips approximately 3 to 4 times as wide as the treated area, unless it has been determined these treatment methods are not adequate or current research recommends otherwise. Treatment objectives should consider seasonal habitat use and incorporating various greater sage-grouse cover and height objectives across the landscape.



9. Identify patches of sagebrush that are at or exceed 40% total shrub cover. These patches would be prioritized to be left as patches and stringers within the mosaic design of the treatment.
10. Maintain sagebrush communities on a landscape scale. Allow greater sage-grouse access to sagebrush stands with canopy cover of 10-40% and heights of at least 25-35 cm by creating a mosaic of sagebrush covers and age classes on the landscape.

*(2) Wildlife Timing Restrictions:*

- Migratory birds – Avoid treatments during the migratory bird nesting season from May 15 – July 31. If treatment is to be implemented during the nesting season, a biologist would determine the appropriate survey methods (timing, frequency, etc.) and restrictions needed prior to implementation to minimize impacts to migratory birds. Areas where concentrated bird nesting is occurring would be flagged and avoided.
- (BLM) Raptors – Avoid conducting treatments from April 15 – July 31 within a half-mile of active raptor nests and one mile of an active eagle nest.
- Big Game – Avoid conducting treatments within big game calving/fawning/kidding grounds and crucial summer range from April 15 – June 30.
- Wildlife (FS) Goshawk and flammulated owl nesting surveys would be done before prescribed fire is used in potential nesting habitat

*(3) Wildlife Treatment Design:*

- Tree removal treatments should include runners of trees along the drainages and islands of trees to maintain diversity for wildlife, nesting habitat for Ferruginous Hawks (*Buteo regalis*), and to achieve a natural appearance and seeded if there is no existing herbaceous understory. The location of stringers and islands of trees would take into account the relationship to habitat of the Greater Sage-grouse.
- Minimize sagebrush treatments in areas that consist of optimal pygmy rabbit habitat. .
- Prescribed fire would not be used in occupied habitat for pygmy rabbits. Trees in these areas may be removed with chainsaws and accessed by foot
- Leave and maintain large, cone-bearing pinyon trees in patches within the treatment area for the Pinyon Jay (*Gymnorhinus cyanocephalus*), black-throated gray warbler (*Setophaga nigrescens*), and the juniper titmouse (*Baeolophus*

*ridgwayi*). Large stands of pinyon would remain within, and adjacent to, treated areas.

b) Visual Resource

On lands administrated by the Ely BLM treatments of the most concern are within Visual Resource Management (VRM) class II areas where the objectives are to retain the existing character of the landscape, allowed change is low and activities may be visible, but should not attract attention of the casual observer. To meet these objectives the following design criteria would be followed when designing vegetation treatments in VRM class II areas.

Mechanical treatments, especially in sagebrush systems would include runners of trees along the drainages and islands of trees to achieve a natural appearance to meet VRM objectives. Prior to project implementation, stringers and islands would be mapped to produce a mosaic pattern. Biomass remaining on site would be scattered on the ground following treatment.

On lands administrated by the FS, Visual Quality Objective (VQO) for the Ward Mountain division is Partial Retention. (Humboldt National Forest Land and Resource Management Plan pages IV-18, 19, 20 and 21).

Management activities should be subordinate to the surrounding landscape within one year.

On lands administrated by the Ely Shoshone tribe, all treatments could temporarily degrade the visual aesthetics of the treated areas. However, treatments would be distributed across the woodland areas and the woodland areas would not be treated all at once. In the long term, the treatments would improve the composition and structure by increasing herbaceous and woody species diversity and age class, improving stand health, and allowing for natural ecological change.

All treatments, regardless of VRM class would ensure that all treatment edges are curvilinear to broken and mimic natural disturbances to the greatest extent feasible. Prior to project implementation, stringers and islands of vegetation would be identified to be left undisturbed. These areas would be mapped, flagged and subsequently not treated in order to produce a mosaic, naturally occurring pattern. Figure 4 “Image depicting the “natural” interface from woodland sites above to rangeland sites below with stringers of trees along washes and in depressions”. A buffer of vegetation would remain along all main bladed roads that intersect chainings. These restrictions would help visually soften

the edges of the treatment polygon, minimize the degree of change in contrast to the vegetation element, as well as disguise or hide the treatments in order to better mimic natural patterns across the landscape and not attract the attention of the casual observer and therefore meet the VRM class objectives.



Figure 4 Image depicting the “natural” interface from woodland sites above to rangeland sites below with stringers of trees along washes and in depressions.

As each of the proposed vegetation treatments are being designed and implemented they would be reviewed and subsequently monitored by the VRM specialist to ensure that they are in compliance with VRM objectives.

- Conduct vegetation treatments to achieve a more attractive, open and diverse condition that is more consistent with the historic range of the project area scenery.
- Long term visible vegetation damage, skidding, slash and soil exposure is minimized (to remain visually unnoticed from trails, trailheads and views into the project area.
- Vegetation removal would be done in a manner that attempts to protect residual trees and ground cover characteristics from apparent damage.

- Create no long term linear lines or extreme soil disturbances that create color contrasts or other noticeable contrasts.
- Vegetation treatments must be accomplished so as to mimic natural events that result in a characteristic landscape appearance (vegetation mosaics, differing heights and densities, etc.)
- Skid Roads and Landings: Utilize existing skid roads and landings to the extent possible.
- Retain natural appearing large snags and down logs when they do not pose safety or fuels hazards.

c) Cultural

The USFS, BLM and Ely Shoshone would comply with Section 106 of the National Historic Preservation Act; with BLM and FS each working off of different agreements with Nevada State Historic Preservation Office (SHPO). The USFS would utilize the Central Zone Vegetation Management Protocol Agreement between the USFS and SHPO; and the BLM would utilize a project specific programmatic agreement (PA) to accomplish Section 106 compliance to achieve the same goal.

Both agencies agree that prior to implementing treatments that all ground disturbing type activities would be inventoried to class III standards to identify, record, and evaluate cultural resources. Site evaluations would identify those sites potentially eligible to the National Register of Historic Places (NRHP).

BLM compliance with Section 106 of the NHPA is principally accomplished through the State Protocol Agreement and Programmatic Agreement between the BLM and the Nevada SHPO. A Cultural Resource Needs Assessment (CRINA) would be completed for each treatment unit prior to implementation of any treatment and completed by a cultural resource specialist, prior to implementation of any treatment. All treatment units that create surface disturbance would be inventoried to Class III standards to identify, record, and evaluate all cultural resources and identify those sites that may be eligible to the NRHP. All determined eligible resources (historic properties) would be avoided with appropriate buffers, or impacts mitigated as necessary before any surface disturbing treatments are initiated.

The USFS compliance with Section 106 of the NHPA is accomplished through the agency's Protocol Agreement; and as stated in the agreement the eligibility of all cultural resource would be determined in consultation with SHPO and other interested parties. The treatment of historic properties would follow the standard protection measures listed in Appendix A of the Central Zone Vegetation Management Programmatic Agreement.

d) Minerals Restrictions

A survey for mining claim markers in documented active claim sites would be conducted prior to implementing treatments. All active mining claim marker locations and tag information would be recorded. Active mining claim markers or stakes would be avoided to the extent practical. Active mining claim markers that are destroyed by prescribed burning, thinning, or chaining operations would be re-staked using a legal mining claim marker. The re-staking of mining claim markers would occur in coordination with the existing mining claimants to ensure accurate, legal staking procedures that would minimize damage to claims.

If any mining sites or dumps are discovered within the project area, operations would avoid these sites in order to minimize risk from potentially hazardous materials or mine features. Sites would also be reported to the Ely BLM or FS District Hazardous Materials Coordinators for future cleanup.

Abandoned mines would be identified and marked for the safety of crews working in the area, and reported to the Abandoned Mine Lands (AML) coordinator in the Ely District BLM Cultural Program.

e) Travel Restrictions

No new roads would be constructed or created during project implementation. Off-road travel with heavy equipment and vehicles would occur during implementation. Loading and unloading any equipment would occur on existing roads to minimize off-road disturbances and impacts. Following completion of mechanical treatments, any skid trails or locations used by vehicles off established roads would be re-vegetated to ensure that unauthorized roads and/or trails do not develop. To provide for public safety signs would be posted along roads within or adjacent to treatment units in regards to travel restrictions.

(BLM) No off-road travel would be authorized for harvest of fuelwood by the public, unless specifically allowed by the authorized officer and subject to the following considerations and restrictions that would be determined at the time of authorization:

- Vehicle size limitations
- Timing restrictions
- Avoidance areas for sensitive resources
- Soil conditions

- Off-road travel would not be authorized for the duration of grazing closure for the same area, if applicable.
- Off-road travel would be allowed until the biomass has been removed or for a period not to exceed five years following the opening of the area for off-road fuelwood collection

(FS) Off-road travel is allowed (300 feet) to gather fuelwood with a valid permit.

(FS) Within the Murray Watershed motorized travel is confined to designated roads or trails.

f) Grazing

Coordination with the affected livestock permittees within the allotments being treated would be conducted prior to any treatment occurring.

Any livestock grazing mandatory rest periods for the purpose of the vegetation treatment would be done through the grazing decision or agreement process and would occur prior to the treatment. Livestock grazing would not be authorized within the treatment areas during implementation of the selected alternative. Seeded areas and areas that have been burned would be rested from livestock grazing for a minimum of two growing seasons or until the following vegetation objectives have been met:

- (BLM) A minimum of five or more desirable perennial plants per square meter would be firmly rooted in the treated area or the treated area exhibits 10 percent foliar cover of desirable perennial grasses and forbs. Desirable perennial plants are those plants that are native or intentionally introduced and have the ability to maintain ecosystem processes and provide forage for livestock and wildlife.
- BLM administrated lands an interdisciplinary team would conduct a review of the resource monitoring data and objectives to determine if and when livestock grazing should be allowed to occur within the project area. If environmental factors prevent attainment of resource management objectives following the mandatory rest period, an interdisciplinary team would review resource monitoring data and determine an appropriate grazing regime with the permittee. Any terms and conditions specific to livestock grazing within the project area would also be discussed and included in any annual grazing authorization, which would require a new grazing decision to be issued.
- (BLM) In aspen stands, livestock grazing would not be scheduled following treatment for two complete growing seasons or until the following vegetation objectives has been achieved: Regeneration of 350 aspen shrub phase stems per

- acre and 175 saplings per acre greater than 1.5 inches diameter at breast height (DBH).
- (FS) In areas where vegetation treatment and/or reseedling are employed, a minimum of two year rest will be implemented as directed by the Forest plan. In aspen treatment areas grazing would be deferred until the regeneration reaches an average height of 6 feet.
  - (FS) In areas where mechanical methods are used, adjustments would be made to lessen impacts by livestock. Adjustments may include temporary head month reductions, changes in rotation of livestock operations, and resting areas of concern.

g) Soils/Water/Air

*(1) Soils/Water*

- Crossing ephemeral drainage features, washes, or draws would be avoided unless deemed absolutely necessary. If the crossing or entering of drainage features must be undertaken, ingress and egress would be as close to 90 degrees to draw long-axis as possible and with as little bank disturbance as practicable.
- (BLM) Slash or woody material of sufficient size and depth could be placed in ephemeral drainage features to protect banks and draw bottoms at designated crossing sites and would be removed when the crossing is no longer needed. Re-contouring of drainage feature banks or bottoms would occur as needed following completion of treatment, restoration of drainage crossing, or otherwise as identified by project manager.
- Skidding or other activities that would tend to loosen the soils should be kept away from areas of steep slopes.
- Protect water quality through the use of best management practices (BMP's) as listed within the specialist report which are employed by the Federal agencies and the State of Nevada to prevent water quality degradation and to meet state water quality objectives relating to non-point sources of pollution. In addition, use site-specific mitigation measures that relate directly to these BMP's to minimize erosion and resultant sedimentation.
- (BLM) Remove any slash generated by project activities from stream courses as soon as practicable.
- (FS) Remove no trees adjacent to perennial channels that provide bank stability and/or contribute to channel integrity (except for hazard trees).

- Retain at least 90% of large woody debris in channels and attempt to leave 50-75% of the ground unburned within the interior 50' of drainages. Within these core areas, ensure that burned areas appear intermittent, not concentrated.

h) Air Quality

- An Open Burn Variance through the State of Nevada-Bureau of Air Quality Planning would be required for implementation of prescribed fire, and wildfire for resource benefit treatments in accordance with the following documents:
- Interagency Prescribed Fire Planning and Implementation Procedures Guide (2014)
- Forest Service Manual 5100-Wildland Fire Management Chapter 5140-Hazardous Fuels Management and Prescribed Fire 5100-2014-3
- Forest Service Manual 5100-Fire Management Chapter 5140-Fire Use 5100-2004-2 R4 Supplement

i) Cadastral

In accordance with IM-NV-2007-003, lands administrated by Ely BLM, surveys would be conducted for cadastral monuments and markers prior to any surface disturbing activities and that, if they are disturbed, they would be restored after treatment where possible.

j) Private Land

There are private lands located within the boundaries of proposed treatment units. These private lands would not be treated unless a cooperative agreement is in place between the BLM/Forest Service and the landholder.

k) Rights-of-way

All utility lines and other rights-of-way (ROW) structures would be avoided during implementation, depending on the selected treatment type. Above ground structures associated with buried utility lines would also be avoided. Any potential ROW holders within the treatment units would be notified prior to implementation.

l) Recreation

Large trees in and around dispersed campsite areas are considered recreational amenities that provide privacy, shade, and ambiance. Where proposed vegetation treatments include dispersed campsite areas (disbursed campsites include a fire ring and sign of



recent use), a buffer (100ft) of existing trees would be left undisturbed. Where treatments overlap the Ely SRPA (special recreation permit area), the race proponent would be notified about the treatment and treatment activities would not occur on the day of the event.

Vegetation treatments may create new open areas that OHV users may perceive as open for cross-country vehicle travel. Signage indicating “All motorized vehicle travel is to remain on open existing roads and trails” may need to be placed at strategic locations and where post monitoring discovers newly created routes.

m) Noxious and Invasive Weeds

Mitigation measures as identified within the Weed Risk Assessment (Appendix A) would be adhered to.

- Implement preventative management measures for the proposed project to reduce the risk of introduction or spread of undesirable plants into the area.
- Monitor the area for at least three consecutive years and provide for control of new infestations.
- Initiate control treatment on noxious/invasive weed populations that get established in the area.

n) Forestry

Avoid removal of pinyon pine and juniper displaying old-growth characteristics. Old-growth characteristics generally include trees displaying a combination of the following: broad asymmetric tops, deeply furrowed bark, twisted trunks or branches, dead branches and spike tops, large lower limbs, hollow trunks (mostly in juniper), large trunk diameter relative to tree height, and branches covered with lichen.

o) Vegetation

*(1) Sensitive Plants*

- All machinery will be thoroughly cleaned of all soil and plant materials and inspected prior to entering the project area.
- No mechanical treatment other than chainsaw lopping will occur within 300 feet of any stream bed or 100 feet of any wetland community.
- No mechanical or prescribed fire treatment will occur within 300 feet of the edge of any known invasive species infestation.

### 3. *Treatment Units*

Within the Ward Mountain Restoration Project there are a total of 17 treatment units (see Figure 5). Treatment units cross administrative boundaries and include a variety of treatment objectives and treatment types. The treatment methods and biophysical settings are presented in Table 3 below with the treatment units within which they occur.

The acres presented within the proposed action represent estimates based on the Biophysical Setting Model data. Actual acres treated may vary up to 10% higher or may be lower depending upon the multiple variables involved. The different treatment unit categories as proposed within the preferred management scenario of the Ward Mountain Restoration Project include:

a) Restoration of depleted vegetation:

Restoration of depleted vegetation classes involves the use of mowing, roller chopper or dixie harrow to mechanically thin depleted shrub species. The areas would be seeded following or during treatment. In areas where there is a moderate to high potential for invasive annual grasses to become established herbicide may be applied prevent establishment.

Objectives:

- Restore cover of desirable herbaceous understory and shrub overstory of treated vegetation to “early development” and “mid-development open” seral classes as described by the respective Biophysical Setting Model.

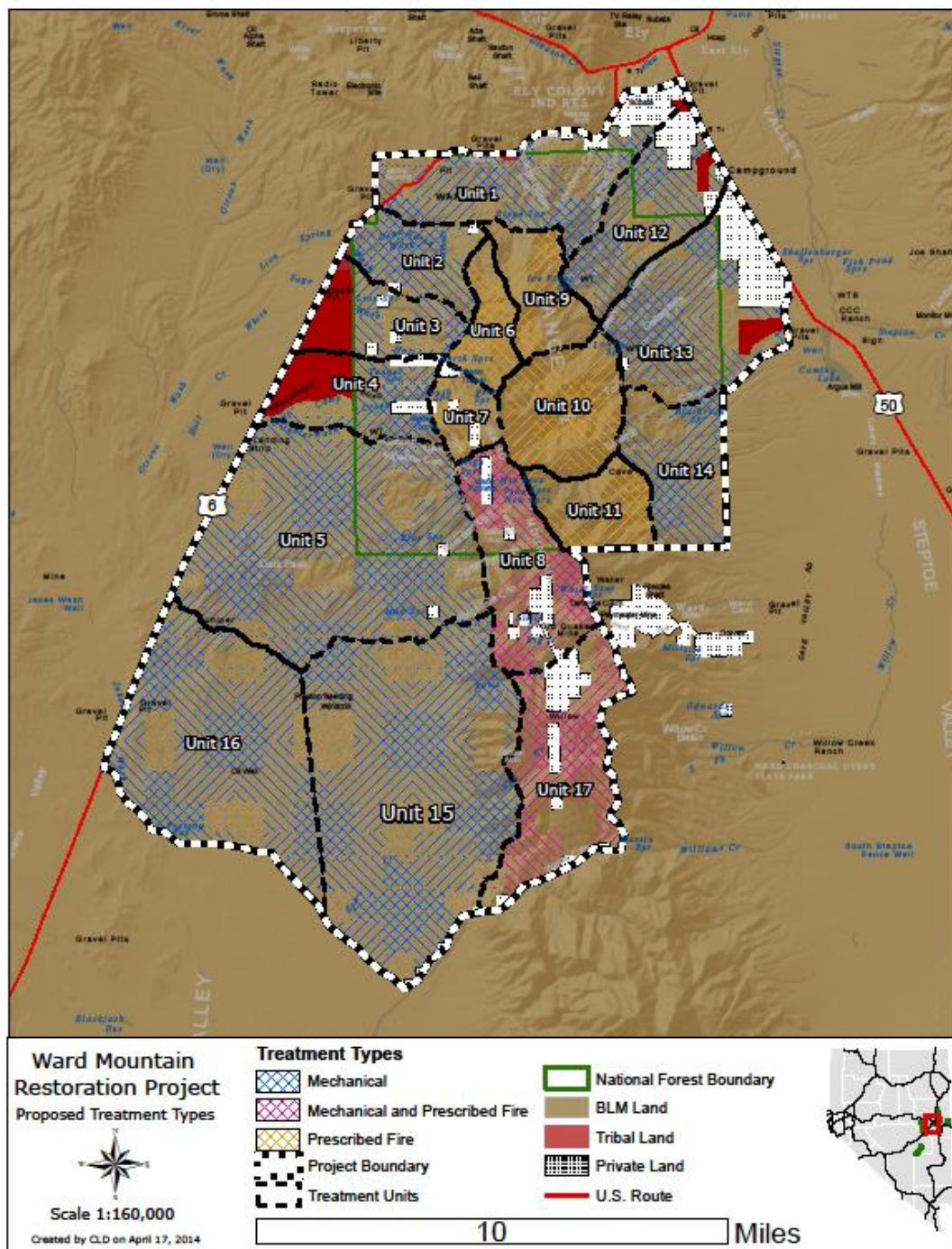


Figure 5 – Ward Mountain Restoration Project proposed treatment units and types.

Table 3 - This table outlines the Biophysical Settings (The Nature Conservancy 2010) by treatment unit with the Potential Treatment Methods and Potential Management Actions.

Unit #	Biophysical Settings	Potential Treatment Methods	Potential Management Actions
1, 5, 13, 15	Basin Wildrye (loamy bottom)	Chaining, Chainsaw lopping, seeding, mastication, roller chopper, Dixie harrow, mowing, annual grass, herbicide	Invasive weed inventory, spot treatment of invasive weeds, treat shrubs with annual grass understory via thinning, herbicide, seeding; treat tree-establishment with mechanical thinning and seeding, mechanical thin and seed depleted sagebrush to restore native grasses,
1-5, 9, 12-17	Black Sagebrush	Chaining, Chainsaw lopping, seeding, mastication, roller chopper, Dixie harrow, mowing, annual grass, herbicide, prescribed burning	Chain to remove established conifers and some seeding, Masticate to remove established conifers and some seeding, chainsaw to remove conifers, mechanical thin and seed depleted sagebrush to restore native grasses, mechanically thin trees established within sagebrush, apply herbicide and seed
1-17	Montane Sagebrush Steppe-upland	Chaining, Chainsaw lopping, seeding, mastication, roller chopper, Dixie harrow, mowing, annual grass, herbicide, prescribed burning	Chain late succession classes to restore earlier classes, chainsaw to remove conifers, mechanically thin and seed depleted sagebrush to restore native grasses, mow and apply herbicide to shrubs with annual-perennial grass
2-5, 12-13, 15, 16	Winterfat	Chaining, seeding, roller chopper, Dixie harrow, mowing,	Restore depleted winterfat to mid successional classes, seeding with natives
1, 3-5, 12-16	Wyoming Big Sagebrush	Chaining, chainsaw lopping, seeding, mastication, roller chopper, Dixie harrow, annual grass, herbicide	Herbicide treatments to annual grass and see to restore native grasses, mechanically thin and seed depleted sagebrush to restore native grasses, herbicide to restore earlier succession class, restore shrubs with annual grass with mechanical thinning, herbicide and seed, mechanically thin trees established within sagebrush-apply herbicide and seed.
7,8,10,11,15, 17	Montane Sagebrush Steppe-mountain	Seeding, prescribed fire	Prescribed fire to convert last succession classes to early succession, apply seed as needed.
6-10, 11, 17	Aspen-Mixed Conifer Woodland, Aspen Forest Woodland	Chainsaw lopping, prescribed fire	Prescribed fire and or mechanical thin to increase early succession class

Table 4 – Restoration of depleted vegetation acres treated over a 20 year period by ecological system.

<b>Ecological System</b>	<b>Years</b>	<b>Total Acres Treated</b>
Basin Wildrye	1-5	1,050
Black Sagebrush	1-20	15,000
Montane Sagebrush Steppe – upland	1-5	200
Winterfat	1-5	375
Winterfat	6-20	750
Wyoming Big Sagebrush	1-20	2,000
<b>Total</b>		<b>19,375</b>

b) Prescribed Fire:

Prescribed fire would be used as a treatment targeting late seral aspen and montane-sagebrush. Black sagebrush adjacent to the other two systems has been included and evaluated. Prescribed fire that moves into montane sagebrush-mountain and mountain shrub would not be suppressed; however these systems would not be intentionally targeted.

Objectives:

- Restore cover of desirable herbaceous understory and shrub overstory of treated vegetation to “early development” and “mid-development open” seral classes as described by the respective Biophysical Setting Model.

Table 5 – Prescribed fire treatment acres over a 20 year period by ecological system.

<b>Ecological System</b>	<b>Years</b>	<b>Total Acres Treated</b>
Aspen Mixed Conifer	1-5	1,000
Montane Sagebrush Steppe – upland	1-20	3,120
Montane Sagebrush Steppe –	1-20	100
Mountain Shrub	1-20	100
<b>Total</b>		<b>4,820</b>

c) Restoration of Sagebrush with Conifer Establishment:

The restoration of sagebrush with conifer establishment has been identified for late seral black sagebrush, montane sagebrush steppe-upland and Wyoming big sagebrush. This treatment involves mechanically thinning pinyon and juniper, applying herbicide to

prevent the establishment of invasive annual grasses and/or reseeding the area. All methods of mechanical tree removal discussed may be utilized within these areas.

The sagebrush systems within the Ward Mountain project area you will find a mix of the different Phases of development of the expansion of pinyon-juniper.

Restoration of tree encroached areas (i.e., TrEnc Restoration) was identified for three focal systems in the Preferred Management scenarios for Ward Mountain: black sagebrush, montane sagebrush steppe – upland, and Wyoming big sagebrush.

Tree encroached classes of sagebrush have a high percentage of younger trees (as determined by height and ‘conical’ shape) with an understory mostly lacking shrub and herbaceous components. A pinyon or juniper tree will be considered young if less than 100 to 150 years. Often, dead skeletons of sagebrush are found within the tree encroached areas. In some cases, annual grass (i.e., cheatgrass) is detected (TrAG class) but for most treatments of tree encroached classes, a seed bank of cheatgrass is assumed and accounted for in application of the strategy.

Since the presettlement period (pre 1880’s) pinyon and juniper have expanded mainly into sagebrush and to a lesser degree, other ecosystems. This rapid expansion is due to fire suppression, grazing practices, and a climate which favored the establishment and growth of these woodland species (Tausch et. al. 1981). It is estimated that 2/3’s of the area within the Great Basin currently occupied by the pinyon–juniper cover type is considered expansion pinyon–juniper; only 1/3 are historic woodlands (Miller, et. al. 2008). Expansion pinyon–juniper is in various phases of development. Miller et. al. 2008 defines the early, mid, and late phases of pinyon-juniper woodland successional development as:

Phase I - trees are present but shrubs and herbs are the dominant vegetation that influence ecological processes on the site (low canopy).

Phase II - trees are co-dominant with shrubs and herbs and all three vegetation layers influence ecological processes on the site (medium canopy).

Phase III - trees are the dominant vegetation and the primary plant layer influencing ecological processes on the site (high canopy).

As Phase I and II transition into Phase III, the understory shrubs, grasses and forbs are lost as trees dominate the site and tree canopy cover increases. The loss of the ground vegetation and increased density of canopy fuels marks a shift in biomass to crown fuels which can significantly affect fire severity. The more tree dominated the woodlands become, the less likely they are to burn under moderate conditions. In addition, Phase III pinyon-juniper has lost much of the seed source necessary to regenerate understory herbs, grasses and shrubs following a disturbance (Miller et. al. 2008).

Table 6 – Tree removal, treatment acres over a 20 year period by ecological system.

<b>Ecological System</b>	<b>Years</b>	<b>Total Acres Treated</b>
Basin Wildrye	1-20	100
Black Sagebrush	1-20	3,000
Montane Sagebrush Steppe – upland	1-5	300
Montane Sagebrush Steppe – mountain	6-20	600
Wyoming Big Sagebrush	1-20	1,000
<b>Total</b>		<b>5,000</b>

d) Treatment of Annual Grasses:

Treatment of annual grasses is focused on the suppression of annual grasses within the targeted areas. The treatment of annual grasses has been divided into three different treatment types which are:

- Restoration of shrub-annual-perennial grass areas (i.e., ShAP restoration) in montane sagebrush steppe – upland to restore to early and mid-succession classes. ShAP restoration entails:
  - Mowing sagebrush and application of herbicide.
  - Seeding is not a component of this strategy because a seed bank of native species is assumed to be present with a high likelihood of recovery following treatment.
- Restoration of shrub-annual grass areas was identified for basin wildrye, montane sagebrush steppe – upland, and Wyoming big sagebrush. ShAG restoration entails:
  - Mowing sagebrush and application of herbicide (e.g., spot treatments).
  - Seeding with a mix of native-nonnative species, likely via broadcast seed.
- Restoration of areas invaded by annual grass (AG restoration) which entails:
  - Application of herbicide to annual grasslands and,
  - Seeding to restore native grasses. The seed mix is likely a combination of native-nonnative forbs, grasses and shrubs

Objectives:

- Restore cover of desirable vegetation and replace and/or reduce the cover of invasive annual grasses.

Table 7 – Treatment of annual grass acres over a 20 year period by ecological system.

<b>Ecological System</b>	<b>Treatment</b>	<b>Years</b>	<b>Total Acres Treated</b>
Basin Wildrye	ShAG	1-20	100
Montane Sagebrush Steppe – upland	ShAG	1-5	250
Montane Sagebrush Steppe – upland	ShAP	1-5	200
Wyoming Big Sagebrush	ShAP	1-5	500
Wyoming Big Sagebrush	AG	1-20	1,200
<b>Total</b>			2,250

a) Mechanical and Herbicide Treatments of Sagebrush Systems:

Mechanical and herbicide treatments of sagebrush systems within the Ward Mountain project area are proposed to transition mid and late seral sagebrush communities too early and mid-seral communities. There are five different treatment methods identified under the mechanical and herbicide treatment of sagebrush systems, which include:

- Chaining
- Chainsaw Lopping
- Herbicide Tebuthiuron
- Canopy thinning
- Mastication

Table 8 – Mechanical and herbicide treatment of sagebrush systems over a 20 year period by ecological system.

<b>Ecological System</b>	<b>Treatment</b>	<b>Years</b>	<b>Total Acres Treated</b>
Black Sagebrush	Chaining	1-20	4,000
Montane Sagebrush Steppe – upland	Chaining	1-5	1,500
Montane Sagebrush Steppe – upland	Chaining	6-20	750
Black Sagebrush	Chainsaw Lopping	1-20	2,000
Montane Sagebrush Steppe – upland	Chainsaw Lopping	1-5	400
Montane Sagebrush Steppe – upland	Chainsaw Lopping	6-20	300
Wyoming Sagebrush	Herbicide Spike	1-20	200
Montane Sagebrush Steppe – upland	Canopy Thinning	1-5	1,000
Black Sagebrush	Mastication	1-20	2,000
<b>Total</b>			11,150



## Objectives:

- Restore cover of desirable herbaceous understory and shrub overstory of treated vegetation to “early development” and “mid-development open” seral classes as described by the respective biophysical setting model.

## e) Aspen Thinning:

Aspen thinning would focus on mid and late seral stands of aspen to increase recruitment and the amount of early seral communities.

## Objectives:

- Restore cover of desirable herbaceous understory and shrub overstory of treated vegetation to “mid-development open” and “late development open” seral classes as described by the respective biophysical setting model.

Table 9 – Aspen thinning treatment acres over a 20 year period by ecological system.

<b>Ecological System</b>	<b>Years</b>	<b>Total Acres Treated</b>
Aspen-Mixed Conifer	1-5	375
Aspen Woodland	1-20	200
<b>Total</b>		<b>575</b>

#### 4. *Monitoring*

This project would use an adaptive management approach, in which treatments are implemented, monitored and adapted. Monitoring would determine if the desired conditions are being achieved. Adjustments to project prescriptions based on monitoring of the proposed action would not need a new decision unless they are determined to be outside the scope of the proposed action.

Monitoring sites would be established prior to project implementation however; additional sites may be established within one year following treatment completion. Monitoring locations would be measured according to agency protocol during the livestock grazing closure period. The closure period may be extended until vegetation objectives have been met. At that time livestock grazing would resume as permitted.

## a) Wildlife:

- Site visits would occur in treatment areas within habitat for sage grouse to assess use by the species.
- Photo points would be established to document change over time.
- (FS) Photo points would be established within the aspen treatments prior to treatment with prescribed fire, and then retaken for ten years

## b) Heritage Resources:

- (FS) Monitoring by a qualified archeologist during the prescribed burn and mechanical treatments may be used to enhance the effectiveness of protection measures

## c) Noxious and Invasive Weeds:

- Annual site visits would be conducted of treatment areas and noxious weeds would be identified and treated.
- In areas where jackpot burning is applied, monitoring would be implemented before and after treatment.

## d) Range:

- (FS) Monitoring sites would be established prior to project implementation; however, additional sites may be established within one year following treatment completion. Monitoring of locations would be measured annually during the livestock grazing mandatory rest period. The rest period may be extended until vegetation objectives have been met. At that time livestock grazing would resume as permitted and vegetation monitoring would occur Forest Service administered lands every 5-10 years. Relatively small portions within individual allotments will be affected on Forest Service administered lands. Efforts will be made to offset use away from treatment areas or units within the allotment before complete removal of livestock would be required. Resting entire or partial units would cause some hardship for the permittees because they will be unable to graze the permitted amount of head months for a minimum of two consecutive years, depending upon vegetation recovery rates. Additional losses may occur if frequent site visits are necessary to maintain a temporary structure or aggressively manage livestock away from treated areas or units. Any terms and conditions specific to livestock grazing within the project area would also be discussed and included in any annual grazing authorization

- (BLM) On BLM administrated lands an interdisciplinary team would conduct a review of the resource monitoring data and objectives to determine if and when livestock grazing should be allowed to occur within the project area. If environmental factors prevent attainment of resource management objectives following the mandatory rest period, an interdisciplinary team would review resource monitoring data and determine an appropriate grazing regime with the permittee. Any terms and conditions specific to livestock grazing within the project area would also be discussed and can be included in any annual grazing authorizations, which may require a decision to be issued.

e) Roadless (FS):

- Photo points would be established to document recovery and visual changes over time.
- Treatment areas should be inspected annually for unauthorized vehicle use and/or development of unauthorized vehicle routes.

## 5. Maintenance:

Maintenance of treatments may be required in the future to maintain a desired seral state. Maintenance of previously treated areas may be implemented if the treatment unit(s) is departing, as indicated through monitoring, from the respective objectives listed as a result of pinyon and juniper establishment and if hand thinning or mechanical removal of pinyon and juniper would reduce departure from the objectives listed for the treatment units. Any maintenance treatments would be held to the same restrictions and BMP's as the primary and secondary treatments.

Objectives of maintenance include:

- Maintain overall condition and prevent deterioration of Ward Mountain's native ecological systems.
- Restore degraded ecological systems to their natural range of variability (NRV) or an acceptable range if NRV is not feasible.
- Reduce and prevent expansion of High-Risk Vegetation Classes (e.g. exotic species).
- Manage Murray Municipal Watershed and surrounding area to prevent high severity events and restore ecological stability.
- Treat Wildland-Urban Interface (WUI) areas and reduce fuel loads to help protect human settlements and cultural resources in and around the project area from wildland fire.

Treatments would be spaced throughout a 20 year period. Some areas would receive more than one treatment, such as thinning followed by burning, or mowing followed by seeding, etc. Figure 5 is a map indicating the treatment types under the proposed action.

## B. No Action Alternative

Under the No Action Alternative, current management plans would continue to guide management of the project area. No treatments would be implemented to improve wildlife habitats, reduce fuels or improve vegetation conditions. Wildfires would continue to occur and could be managed for resource benefits in accordance with existing policy and regulations. Pinyon and juniper would continue to increase in density across the landscape. Seral aspen stands would continue to progress toward the climax community dominated by white fir and the aspen component may be lost within some stands. Sagebrush and stable aspen communities would continue to age and would contain limited early seral components.

### **III. Affected Environment and Environmental Impacts of the Proposed Action and No Action Alternative**

Potential impacts of the proposed action and no action alternative were identified and evaluated through internal and external scoping of the proposed action to determine if detailed analysis was required.

(BLM) All resources listed within Appendix 5 of the BLM's H-1790-1 (Critical Elements of the Human Environment) have been evaluated for potential impacts resulting from the proposed action and no action alternative. Other than those resources described and analyzed in this document, it has been determined that detailed analysis is not required for any other resources listed in Appendix 5 or resources that were raised through the scoping process.

#### **A. Air Quality**

##### **1. *Affected Environment***

The State of Nevada, Division of Environmental Protection (NDEP) annually monitors principal pollutants for compliance with EPA established standards for all agencies. In 1998 an air quality monitoring site was established in McGill, White Pine County, Nevada to monitor particulate matter (PM10). PM10 is an inhalable coarse particulate less than ten microns in size which is mainly an emission from man-made sources like salt and sand application on roads in winter, work on unpaved roads, construction sites, or rock processing. The monitoring site at McGill was discontinued because PM10 measurements remained well below national air quality standards. The current air quality status in White Pine County for all constituents that NDEP monitors state-wide is termed "unclassifiable" meaning that no annual data is collected.

##### **2. *Direct and Indirect Impacts of the Proposed Action***

All federal, state, and local regulations pertaining to prescribed burning would be followed. Prescribed burning and mechanical treatments may produce PM 2.5 and 10 emissions, and prescribed burning may impact air quality within the immediate vicinity of the project area. Impacts from treatments proposed within the proposed action are expected to be of short duration and locally isolated.

### 3. *Direct and Indirect Impacts of the No Action Alternative*

There would be no direct impacts on air quality from the No Action Alternative. Large scale fires occurring at severity and intensity levels that are beyond the historic fire regime may increase short term emissions of carbon and particulate matter as compared to historic patterns of emissions.

## B. Cultural Resources

### 1. *Affected Environment*

(BLM) The cultural resource's sensitivity for the 100,000 acre area of potential effect (APE) would vary from low to high, where prehistoric resources would be low at the higher mountain elevations and side slopes, but would increase moderate to high around springs, stream corridors and alongside the base of the mountain along the length of fan piedmonts. Approximately 335 prehistoric sites have been recorded within and adjacent to the APE, with lithic scatters of various sizes dominating site type. No rock art or rock shelters have been recorded within or adjacent to the APE. Tribal consultation resulted in no identification of traditional religious and/or culturally important properties within the APE. The APE for FS lands consisted of all forest service administered lands within the Ward Mountain project area.

The historic site sensitivity is high in pocket locations, and moderate to low outside of these pocketed areas. The high sensitivity pockets are feature remnants associated with the Lake and Ward mining districts dating back to the early 1870's. The Lake mining district is located along the Egan Range on the western side of the APE, overlooking White River Valley; and the Ward mining district is located primarily on the eastern side of the Egan Range overlooking Steptoe Valley. The limited mining activity of the Lake District perpetuated the districts to join as one under the Ward Mining District. The mining camp of Ward (1876-1887) is located along Ward Gulch at the base of the Egan Range and Steptoe Valley.

The Nevada Charcoal Ovens State Park is located three miles south of the Ward mining camp outside of the mining district proper. The State Park contains the National Register listed site of the ovens that were constructed in the 1880's to create charcoal for the milling process. Forest Service conducted surveys on FS lands and 10 sites related to charcoal production were found. Although it would be anticipated BLM lands within the APE that the surrounding hills around the ovens would show evidence of harvesting trees in the form of tree stumps and small trash scatters, the treatment units of this project are located over the ridge on the east and west side of the Egan Range.,

In addition to the mining activities, agriculture activities are known throughout the project area with the most prevalent being livestock grazing, and development of spring areas. The first plat maps of 1870's note numerous trails within and immediately adjacent to the APE, with the most notable being the Toano to Pioche trail.

## 2. *Direct and Indirect Impacts of the Proposed Action*

Under the Proposed Action, whether manual or mechanical treatments, there would be no adverse impacts to historic properties (NRHP eligible cultural sites, prehistoric, historic, TCP's, sacred sites) based on avoidance. All Historic Properties would be avoided during any surface disturbing activities, which typically are incorporated with planned vegetative mosaic patterns. The risk of damaging an eligible historic property during implementation of treatments is minimal.

(BLM) For this undertaking all ground disturbing activities would have completed a Class III cultural inventory that would include identifying, recording and evaluating a sites potential to the NRHP. Some parts of the project area have been previously inventoried to Class III standards.

(FS) Presently there are recorded Historic Properties that exist within the project area.

For BLM administered lands the project would work under a specific Ward Programmatic Agreement established between BLM and SHPO. For USFS administered lands the project would work under the Central Zone Vegetation Management Protocol Agreement between the USFS and SHPO. The treatment of historic properties by the USFS would follow the standard protection measures listed in Appendix A of their PA. Ely Shoshone tribe will follow Section 106 of the National Historic Preservation Act, as amended in 1992 (16 USC 470 et seq.) and NHRP (36 CFR Part 60).

## 3. *Direct and Indirect Impacts of the No Action Alternative*

Under the No Action Alternative, there would be no immediate impacts to Historic Properties. However, in the long term, the vulnerability for impacts greatly increases with possible disastrous results to unknown cultural resources could result from wildfires due to a continued increase in dense vegetation.

## C. Inventoried Roadless Areas (FS)

### 1. *Affected Environment*

There is one Inventoried Roadless Area (IRA) within the project area, the Ward Mtn. IRA (17-01; 15,924 acres).

### 2. *Direct and Indirect Impacts of the Proposed Action*

None of the aspects of the proposed action would affect this roadless areas suitability for wilderness designation. Based upon the 1999 and 2006 roadless reviews this IRA was dropped from further consideration as wilderness due to a variety of factors.

The proposed Ward Mtn. Restoration Project would have a minimal impact on the overall integrity of the Ward Mtn. IRA. There would be short-term impacts associated with prescribed fire and some of the mechanical treatments. Such as, restriction of access for the public to portions of the project area during implementation may occur, cut stumps may be visible but with the regeneration of vegetation following treatments should lessen visual impacts over time; and the presence of motorized equipment during implementation. The long-term impacts could be from planned or unplanned wildfire, un-managed recreation or other natural disturbances (bugs, disease and avalanche's) that have the potential to increase invasive or noxious weeds. .

### 3. *Direct and Indirect Impacts of the No Action Alternative*

The No Action Alternative would not directly or indirectly impact the Ward Mtn. IRA.

## D. Lands with Wilderness Characteristics (BLM)

### 1. *Affected Environment*

On June 1, 2011, the Secretary of the Department of the Interior issued a memorandum to the BLM Director that in part affirms BLM's obligations relating to wilderness characteristics under Sections 201 and 202 of the Federal Land Management Policy Act. The BLM Released Manuals 6310 and 6320 in March 2012, which provide direction on how to conduct and maintain wilderness characteristics inventories and provides guidance on how to consider whether to update a wilderness characteristics inventory.

The primary function of an inventory is to determine the presence or absence of wilderness characteristics. An area having wilderness characteristics is defined by:



- Size - at least 5,000 acres of contiguous, roadless federal land,
- Naturalness (i.e. The degree to which an area generally appears to have been affected primarily by the forces of nature with the imprint of people's work substantially unnoticeable.), and
- Outstanding opportunities for solitude or primitive and unconfined types of recreation.
- The area may also contain supplemental values (ecological, geological, or other features of scientific, educational, scenic, or historical values).

The Nevada BLM completed the original wilderness review in 1979, and issued an initial wilderness inventory decision in 1980. At that time, no units were found to possess wilderness characteristics.

In 2011, the Ely District Office BLM began updating the lands with wilderness characteristics (LWC) inventory on a project-by-project basis until there is a land use plan revision. The project area overlaps a portion of one unit found to possess LWC. There has not been a land use plan amendment to determine if or how these LWC units would be preserved to protect the wilderness characteristics.

Table 10: Summary of NV-040-123B-1b-2012 LWC unit.

<b>Area Unique Identifier</b>	<b>Sufficient Size? Yes/No (acres)</b>	<b>Naturalness? Yes/No</b>	<b>Outstanding Solitude? Yes/No</b>	<b>Outstanding Primitive &amp; Unconfined Recreation? Yes/No</b>	<b>Supplemental Values? Yes/No</b>	<b>Does the unit possess LWC?</b>
NV-040-123B-1b-2012	Yes 23,341	Yes	Yes	Yes	No	LWC present.

## 2. *Direct and Indirect Impacts of the Proposed Action*

The one unit (NV-040-0123B-1b-2012) of LWC found in the inventory updates lies on the southeastern corner of the project area. This unit overlaps with several proposed

treatments: prescribed fire, sagebrush canopy thinning (mowing), aspen thinning, fencing and weed inventory. Combined these treatment areas overlap about 5% of the LWC unit (or 1,400 acres). None of these treatments would impact the size of the unit, as no new roads would be established. Further, these treatments would not measurably affect the outstanding opportunities for primitive and unconfined recreation.

Prescribed fire would not impact naturalness, when or if it is determined to be protected for its wilderness characteristics in the future. The appearance of this treatment upon completion would not be distinguishable as a prescribe fire when compared with a naturally-ignited fire.

In the near-term, the mowing treatments would be apparent to the casual observer as unnatural but over time the treatment would naturalize as it blends with the surrounding landscape. There would be a short-term impact to solitude while the treatment is being implemented, with people and machinery working in the area.

The thinning of aspen may have a limited impact to naturalness, as defined above, with stumps visible throughout the treatment. This may also impact solitude while people are working in the area during project implementation. The fencing of treated aspen stands may occur to reduce herbivory on young saplings. These minor developments would likely be substantially unnoticeable to the casual observer. Weed inventory would not negatively impact naturalness.

### 3. *Direct and Indirect Impacts of the No Action Alternative*

Under the no action alternative, there would be no impact to the LWC unit.

## E. Fish and Wildlife

### 1. *Big Game*

#### a) Affected Environment

Managed big game species that occur within the Ward Mountain project area include Rocky Mountain elk (*Cervus elaphus*), mule deer (*Odocoileus hemionus*), and pronghorn antelope (*Antilocapra americana*). Rocky Mountain elk occur in a wide variety of habitats, from valley benches during winter to the highest elevations during summer and fall. There is elk crucial summer habitat in the higher elevations of the Egan Range of the project area. Pinyon pine and juniper woodlands, aspen stands, and mixed-conifer

forest provide thermal and escape cover. Brush species, including antelope bitterbrush, mahogany, serviceberry, and sagebrush, also provide important cover and forage for elk.

Mule deer are widespread within the project area and are typically associated with middle to upper elevations, which is considered crucial summer range in the project area. Habitat for mule deer includes mixed conifer, aspen, sagebrush, and grasslands. Deer generally are classified as browsers, foraging primarily on forbs and shrubs; however, the importance of forage type varies with season and climate. Important forage shrubs include sagebrush, serviceberry, antelope bitterbrush and mahogany. Mahogany and pinyon pine and juniper woodlands are also important for thermal and escape cover. Aspen stands are a critical spring habitat for fawning mule deer.

Pronghorn antelope prefer gently rolling to flat topography that provides good visibility of the surrounding area, primarily occurring in sagebrush/grassland habitat types. Habitat is located on the east and west of the project area in the lower elevations. The pronghorns' diet consists of grasses, forbs, and browse plants. Sagebrush is important for both food and cover. Other important forage species include antelope bitterbrush, saltbush, rabbitbrush, winterfat, and Indian ricegrass.

The project area also provides habitat for an array of other wildlife species such as coyotes, big cats, rabbits, badgers, grey and red foxes, and numerous other small mammals, reptiles, amphibians, and invertebrates.

b) Direct and Indirect Impacts of the Proposed Action

Under the Proposed Action, impacts to big game and other wildlife would be minimal with implementation of timing stipulations and design features. Individual animals may be disturbed and displaced from specific treatment areas temporarily during implementation; however the disturbance would be short in duration. Most wildlife would be able to escape to adjacent habitat during implementation; however there may be some mortality of slower moving wildlife or wildlife escaping to burrows in treatment area. Treatments would improve the health and diversity of the vegetation, and restore and improve big game habitat.

c) Direct and Indirect Impacts of the No Action Alternative

Under the No Action Alternative, resource conditions are expected to stay the same with continual pinyon and juniper establishment into sagebrush communities and conifer establishment within aspen stands. Over time woodland expansion within the project

area would continue to diminish and fragment the sagebrush and mountain brush communities, decreasing shrub and herbaceous understory. Aspen stands would continue to decrease in size and vigor as conifer trees continued to replace aspen, with the potential to lose an aspen stand entirely. Forage and browse would continue to decline in terms of availability and nutrition, in turn affecting reproduction and survivorship of wildlife. Under the No Action Alternative, wildlife would not be disturbed or harmed because there would be no treatments.

## 2. *Migratory Birds and Raptors*

### a) Affected Environment

#### *(1) Migratory Birds*

Migratory birds are those listed in 50 CFR 10.13 and include many native species commonly found in the U.S. Migratory birds are protected under the Migratory Bird Treaty Act (MBTA). The MBTA makes it unlawful to take, kill, or possess migratory birds as defined by 16 USC 703-711. Migratory bird nesting and foraging habitats are located throughout the project area, with certain species adapted to specific habitat types. All native bird species are integral to properly functioning natural communities and commonly are viewed as indicators of environmental quality based on their sensitivity to environmental changes caused by human activities. Based on known habitat associations, migratory bird species composition may be somewhat anticipated. Great Basin Bird Observatory sampled numerous atlas blocks across Nevada for inclusion within the Atlas of the Breeding Birds of Nevada (Floyd et al. 2007). Appendix B lists the breeding birds documented in the project area from the surveyed atlas blocks. This list is not exhaustive as it is based only upon surveys or incidental observations for the Atlas during four survey years (1997-2000).

#### *(2) Raptors*

The Ward Mountain project area supports a diverse suite of raptor species with 13 species documented in the project area. Though only 2 species have been documented as having nested, it can be assumed that a portion of the observed species could be nesting in the project area. Specific habitat needs vary by species, but all raptors have the common requirement of an adequate prey base of small mammals, reptiles, and birds.

In Fall 2004 and Spring 2005, Hawk Watch International (2005) conducted raptor migration surveys in the Egan Range. Fall and spring raptor passage rates of 1.9 and 2.4 raptors/hour, were documented at the Ward Mountain site, respectively. American

kestrels were the most observed resident raptor in the fall and turkey vultures in the spring.

**(a) Golden Eagle (*Aquila chrysaetos*)**

The golden eagle is protected from “take” by the Bald and Golden Eagle Protection Act (BGEPA). The BGEPA prohibits take as defined as pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, disturb, or otherwise harm eagles, their nests, or their eggs. Under the BGEPA, “disturb” means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity by substantially interfering with normal breeding, feeding, or substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment by substantially interfering with normal breeding, feeding, or sheltering behavior. All management activities within the Ward Mountain project area should follow the guidelines in the Interim Golden Eagle Technical Guidance (US Fish and Wildlife Service, 2010).

Golden eagles have been observed in the Ward Mountain project area and may use the area year round. Golden eagles have large breeding home ranges and are generally spread thin on the landscape (Floyd et al. 2007). Golden eagles typically nest on large cliffs and canyon walls, or on tall, artificial structures, such as electrical poles and towers, and they frequently use these vertical structures to perch while hunting as well; however, no eagles have been documented nesting in the project area. There is potential nesting habitat within the cliffs in the Upper Terraces. Golden eagles build several nests within their territory and use them alternately for several years. Though found in most habitats, golden eagles are often seen hunting in sagebrush habitat (Floyd et al. 2007). Golden eagles predominant prey is leporids (hares and rabbits), sciurids (ground squirrels, prairie dogs, and marmots and gallinaceous birds (pheasants, partridge, and grouse).

**(b) Ferruginous Hawk (*Buteo regalis*)**

Ferruginous hawks occupy a variety of habitat types across their range, including open grasslands, shrub-steppe, croplands, desert scrub, and the periphery of pinyon pine and juniper woodlands. Within Nevada, most individual ferruginous hawks are present as breeders during spring through fall, with a relatively low number of over-wintering individuals depending upon winter severity (Wildlife Action Plan Team 2006). Breeding habitat includes nesting, post-fledging, and foraging areas surrounding nest sites, which are commonly located in juniper trees at the interface between pinyon pine and juniper woodlands and sagebrush/shrub-steppe rangelands. Nesting areas often contain multiple nests used by the same breeding pair over successive years. Although, ferruginous hawks

are not documented nesting in the project area, there are many observed nests near the project area. Ferruginous hawks require an adequate prey base of small mammals with leporids being important prey and comprise the majority of the biomass consumed by ferruginous hawks in Nevada. Many of the mammalian prey species upon which the ferruginous hawk depends are subject to cyclic fluctuation, and in areas where few or no alternate prey species are available, breeding ferruginous hawk number necessarily follow the cycles of the primary prey populations.

**(c) Northern Goshawk (*Accipiter gentilis*)**

The northern goshawk is found throughout most of North America, with a few isolated populations in the southeastern and central United States. In northern Nevada, goshawks breed in somewhat atypical habitat as compared to the rest of North America and are generally found between 6,000 and 10,000 feet in elevation (Neel, 1999). Forest types used by goshawk populations include Douglas fir, various pines, and aspen. In high-elevation shrub steppe habitats, goshawks nest in small, widely-spaced stands of mature aspen trees that grow along creeks and drainages. These aspen stands are located primarily on north and east-facing slopes (Younk and Bechard 1994). The goshawk in northern Nevada is considered a year-round resident.

The typical Northern goshawk nest site in much of Nevada is located in aspen stringers about 600 feet long and 75 feet wide located near small perennial streams (normally within 100 yards) at approximately 7,400 to 7,800 feet in elevation. Ninety-eight percent of nests have been located within 100 feet of water (Herron et al. 1985, GBB0 2010). Aspen is the most commonly used nesting tree with over 85 percent of the observed nests found in this vegetative community (Herron et al. 1985). Nests are large (30 inches or greater) and comprised of 1 ½-inch diameter sticks. Numerous nests (alternate nest sites) may be present within a territory. Within the Ward Mountain project area active goshawk nests have been documented over the years. Goshawks hunt for prey in openings, and they usually hunt these areas from perches near the edge (Younk and Bechard 1994). Goshawks prey on a variety of species, particularly small mammals and birds in timber areas.

**(d) Flammulated Owl (*Psiloscops flammeolus*)**

Flammulated owls are a neotropical migrant and their summer habitat is usually found in mature stands of white fir, subalpine fir, and limber pine (open stands of large Jeffrey pine), and ponderosa pine mixed with aspen (Neel 1999). In Nevada, flammulated owls would also use old aspen stands (Hayward and Verner 1994). Roosting occurs in dense stands, while stands that are more open are utilized while foraging for insects, mainly

moths. These owls nest in the cavities of snags and large live trees that have been excavated by woodpeckers (Wisdom et al 2000, Hayward and Verner 1994).

Nesting habitat consists of both stable aspen (aspen stands without a conifer component) and seral aspen (aspen stands where through succession conifers would be the climax species). Flammulated owl surveys were conducted on the Upper Terraces of Ward Mountain in 2011, with no owls documented.

b) Direct and Indirect Impacts of the Proposed Action

Under the Proposed Action, impacts to migratory birds and raptors would be minimal due to timing restrictions and design features. Treatment implementation would occur outside the breeding bird nesting season or an effort would be made to survey for nesting birds prior to treatment. Due to the difficulty of identifying all migratory bird nests within a project area, some nests or eggs may be destroyed during implementation; however due to adjacent and available suitable habitat within the watershed, local migratory bird populations would not be impacted by the Proposed Action. All active raptor nests would be avoided during implementation of the Proposed Action.

Changes in habitat condition and abundance as a result of the Proposed Action may result in increases in the populations of some bird species at the expense of other bird species. Thus, there is no change that would benefit or adversely affect all bird species. Additionally, treatment design is to incorporate varying succession stages of pinyon pine and juniper woodlands throughout the project area and would benefit pinyon-juniper obligate bird species. Incorporating pinyon pine and juniper stringers into treatment design is expected to benefit ferruginous hawks. Removing conifers within and surrounding aspen stands would improve northern goshawk breeding and foraging habitat. Additionally, improving sagebrush communities would increase the prey base (small mammals and reptiles) for raptors and increase insect populations for passerines.

c) Direct and Indirect Impacts of the No Action Alternative

Under the No Action Alternative, resource conditions are expected to stay the same with continual pinyon and juniper establishment within sagebrush communities and conifer establishment within aspen stands resulting in a decline of grass, forb, and shrub understory. Woodland establishment would continue to deteriorate nesting, breeding, and foraging for migratory birds and raptors that rely upon early seral vegetation within all vegetation communities. Under the No Action Alternative there would be no

disturbance to nesting and breeding migratory birds because no treatments would be conducted.

### 3. *Special Status Species*

#### a) Affected Environment

The BLM 6840 Manual (2008) describes special status species as: 1) species listed or proposed for listing under the Endangered Species Act (ESA), and 2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA which are designated as Bureau sensitive. All Federal candidate species, proposed species, and species delisted in the last five years would be conserved as BLM sensitive species.

The Forest Service Manual (FSM) direction is to manage Forest System habitats and activities for threatened and endangered species to achieve recovery objectives so that special protection measures provided under the Endangered Species Act are no longer necessary (FSM 2670.21). In addition, the Region has identified sensitive species (FSM 2670.22) to ensure that protection is provided to these species to ensure they do not become threatened or endangered because of Forest Service actions.

A table listing BLM and FS Sensitive Species that have the potential to occur within the project area can be found in Appendix B.

#### *(1) Greater sage-grouse*

The greater sage-grouse is a FS and BLM Sensitive Species that has been determined to be warranted for listing under the Endangered Species Act (ESA), but which is precluded by other species of higher-priority (Federal Register/Vol. 75, No. 55/Tuesday, March 23, 2010). To protect greater sage-grouse and their habitat, and potentially prevent the species from becoming listed under the ESA, federal agencies are applying additional conservation measures. The BLM is currently following two issued Instructional Memorandums: IM No. 2012-043 (*Greater Sage-Grouse Interim Management Policies and Procedures*) and IM No. 2012-044 (*BLM National Greater Sage-Grouse Land Use Planning Strategy*). Instructional Memorandum No. 2012-043 provides direction for the management of sage grouse habitat on BLM land, while updating the Ely District's Land Use Plan (LUP). Instructional Memorandum No. 2012-044 establishes consistent protection measures for the species and its habitat to be incorporated into NEPA analysis until local LUPs are amended.



In October 2012, the USFS released “Interim Conservation Recommendations for Greater Sage-grouse and Greater Sage-grouse Habitat for USFS Regions 1, 2, and 4.” The goal of these recommendations is to maintain the integrity of sage-grouse habitat until land management plans are amended. Recommendations are based on protecting sage-grouse habitat as mapped by the Nevada Department of Wildlife (NDOW) (Greater sage-grouse Habitat Categorization Map, 2012). The map is an analysis tool that incorporates the best available data (lek observations, telemetry locations, survey and inventory reports, vegetation cover, soils information and aerial photography) into a statewide prioritization of Greater sage-grouse habitat. Sage-grouse habitat is mapped as preliminary priority habitat (PPH) and preliminary general habitat (PGH) based on NDOW’s habitat categorization mapping.

Preliminary Priority and General Sage Grouse Habitat (PPH and PGH), 32,037 acres and 3,865 acres, respectively, have been identified within the Ward Mountain project area (Figure 6). Preliminary Priority Habitat comprises areas that have been identified as having the highest conservation value to maintaining a sustainable sage grouse population, which includes breeding, late brood-rearing, and winter concentration areas. Preliminary General Habitat comprises areas of occupied, seasonal, and year-round habitat outside the priority habitat. The policies and procedures identified in the above mentioned IMs, the timing restrictions and sagebrush treatment criteria described in the Proposed Action are to minimize population declines and habitat loss in both PPH and PGH. Additionally, these measures would help agencies meet objectives to maintain and restore sage grouse habitat.

Preferred breeding or strutting grounds consist of shorter vegetation within or near a matrix of otherwise suitable nesting habitat, with taller, more robust sagebrush surrounding the lek for escape cover. An absence of trees or other raptor perches near the lek is also preferred. The project area holds a mosaic of sagebrush habitat that serve as breeding, nesting, brood-rearing and wintering habitat. The sagebrush understory of projective nesting areas contains native grasses and forbs with horizontal and vertical structural diversity that provides an insect prey base, herbaceous forage for pre-laying and nesting hens, and cover for the hen while she is incubating (Connelly et al. 2000, Connelly et al. 2004).

According to 2013 NDOW survey data, there are 3 active sage grouse leks and 3 leks of unknown activity within the Ward Mountain project area. Male attendance on these leks is variable with peak male counts ranging from 2 to 20 birds. Within 4 miles of the project area there are 3 active leks with peak male counts ranging from 7 to 36 birds.

Figure 6 shows the distribution of sage grouse leks and PPH and PGH habitat in relation to the project area.

(2) *Pygmy rabbits (Brachylagus idahoensis)*

The pygmy rabbit is dependent on dense stands of big sagebrush in combination with deep, sandy, and loose soils for burrowing. Big sagebrush is their primary food source and constitutes up to 97 to 99 percent of their diet in the winter (White et al 1982). During the summer, grasses become an important part of the diet utilizing 30 to 40 percent (Green and Flinders 1980). Loss of habitat through “fire, grazing, invasion of exotic annuals, and agricultural conversion” has been identified as the most significant contributing factor to pygmy rabbit population declines (Whisenant 1990, Wildlife Action Plan Team 2006). Fragmentation of suitable sagebrush communities can also threaten pygmy rabbit populations due to their limited capacity for dispersal (Wildlife Action Plan Team 2006). There are no known locations of pygmy rabbits within the project area, although pygmy rabbits have been documented adjacent to the project area and therefore, potential habitat may exist within the project area.

a) Direct and Indirect Impacts of the Proposed Action

Under the Proposed Action, impacts to special status species would be minimal with implementation of Best Management Practices, timing stipulations, and design features of treatments. Individual animals may be disturbed and displaced from the area during implementation of treatments.

Treatments are expected to improve habitat for greater sage-grouse, pygmy rabbits, and other special status species by removing pinyon pine and juniper, and other conifers, increasing available sagebrush habitat, improve aspen stands and increasing grass and forb production in sagebrush communities. Treatments would leave a mosaic of various

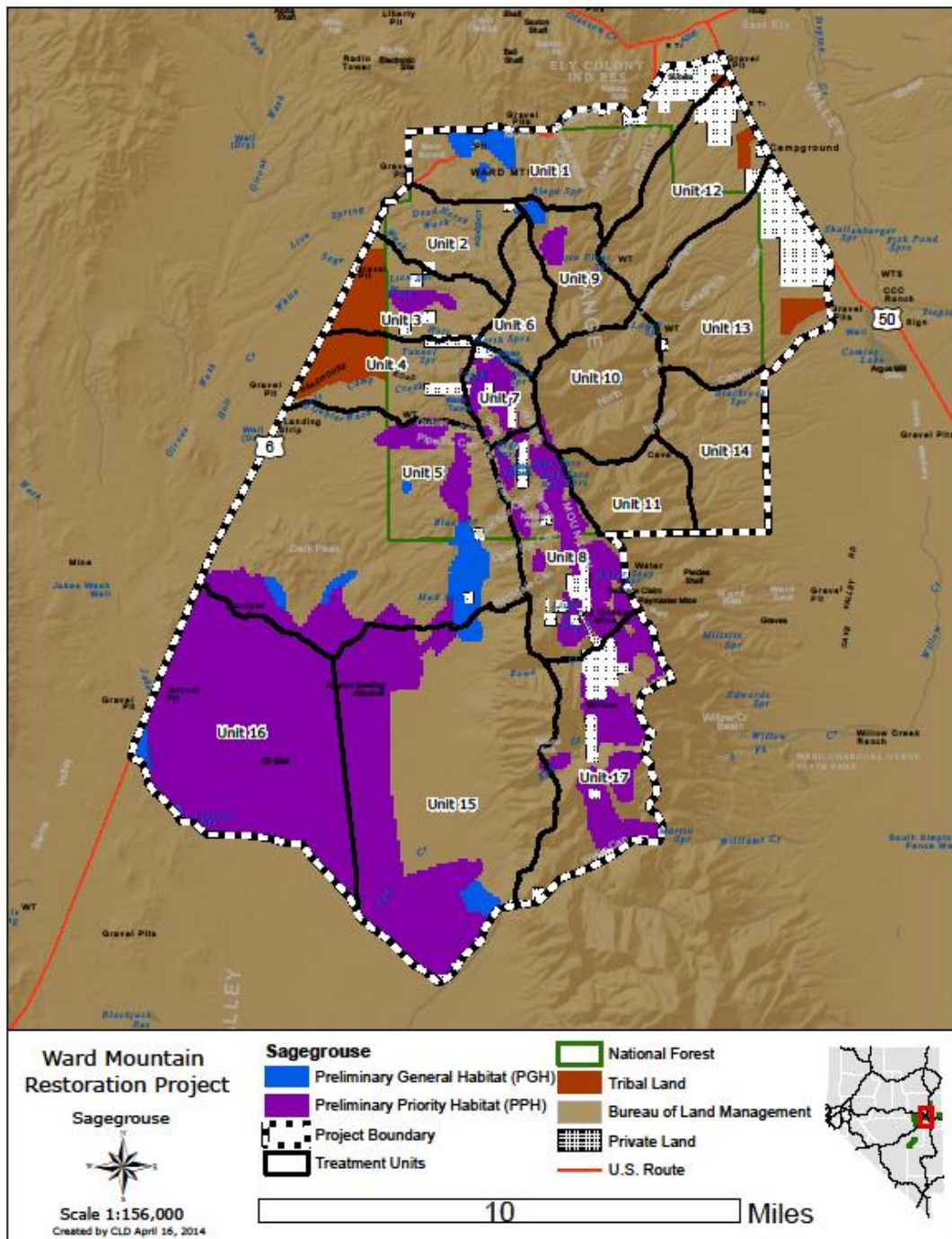


Figure 6 – Ward Mountain Restoration Project Greater Sage-grouse habitat

habitats in the project area, providing greater vegetation diversity, diverse age-class distribution and a patchiness effect which provides thermal and protective cover. Additionally, reducing trees would decrease perches for raptors that may prey on greater sage-grouse and other special status species.

b) Direct and Indirect Impacts of the No Action Alternative

Under the No Action Alternative, resource conditions are expected to stay the same with continual pinyon and juniper establishment within sagebrush communities and conifer establishment within aspen stands. Over time woodland expansion within the project area would continue to diminish and fragment the sagebrush and mountain brush communities, decreasing shrub and herbaceous understory. Aspen stands would continue to decrease in size and vigor as conifer trees continued to replace aspen, with the potential to lose an aspen stand entirely. Forage and browse would continue to decline in terms of availability and nutrition, in turn affecting reproduction and survivorship of special status species. Under the No Action Alternative, special status species would not be disturbed or harmed because there would be no treatments.

## F. Fire and Fuels Management

### 1. *Affected Environment*

Fuel types within the Ward Mountain Restoration Project area represent a broad range of vegetation from high elevation limber and bristlecone pine to salt desert shrub. Past management actions within the planning area has led to an alteration of fire cycles resulting in an increase in fuel build up and continuity of fuels, causing an increase in the potential for large uncontrollable fires. Vegetation within the area has been categorized in to biophysical setting (BPS) models describe the vegetation, geography, biophysical characteristics, succession stages, disturbance regimes and assumptions for each vegetation type (Havlina et al, 2010). For each BPS model reference conditions have been developed to describe the distribution of seral stages within a landscape prior to European influence. Seral classes represent a scale of vegetative succession as a community progresses from post-replacement to later successional states.

The BPS models were utilized within the Ely BLM RMP, which lists vegetation types and a desired future condition (DFC) expressed as percentages of seral classes. In most cases the DFC delineated within the RMP is the reference condition for the respective BPS model. The exception to this is where the RMP delineates a portion of the vegetation to be managed as crested wheatgrass seedings. For this project there are no

treatments proposed within the crested wheatgrass seedings and for the purpose of analysis the reference condition will be used for all BPS models discussed.

Fire Regime Condition Class ratings for the Ward Mountain Restoration Project Area have been calculated utilizing the BPS data collected by The Nature Conservancy and presented in “Ward Mountain Restoration Project: An ecological assessment and landscape strategy for native ecosystems in the Ward Mountain Landscape”. Current FRCC ratings and ecological departures for the Ward Mountain Restoration Project are presented in the table below. Departure of vegetation from the reference condition within the project area has been attributed to past land management activities, the presence of invasive annual grasses.

Vegetation treatments conducted within the Ward Mountain Restoration Project area include mechanical pinyon and juniper removal and prescribed fire and total 1,207 acres. Fire rehab within the project area totals 229 acres.

The Ward Mountain Restoration Project boundary intersects six Fire Management Units (FMUs) as defined by the current Humboldt-Toiyabe National Forest Fire Management Plan (2012) and the updated (2011) Ely District Office BLM Fire Management Plan (FMP). The BLM FMUs within the watershed are categorized into Wildland Urban Interface (WUI) and High Value Habitat (HVVH) with varying constraints placed on acceptable wildfire size and the FS are categorized as Central Mixed Suppression and Central WUI Suppression.

In the past 30 years there has been 159 ignitions recorded within the project area for a total of 709 acres burned. There are three fires that have exceeded 100 acres on record and include the Open Spring Fire (1983) which burned 125 acres, Jakes Fire (2001) which burned 200 acres and the Water Canyon Fire (1995) which burned 240 acres.

### *1. Direct and Indirect Impacts of the Proposed Action*

The implementation of the proposed action and accomplishment of the objectives listed would result in a partial reduction of the FRCC rating for vegetation within the project area. By reducing the departure of the ecological systems and bringing both composition of vegetation and the mosaic of seral classes closer to the reference condition the risk of fires occurring outside of the historical range of variability would be reduced. As ecological systems within the project area become closer to the reference condition it would be expected the natural fires would occur within the historical range of variability thereby maintaining the vegetation in a FRCC 1 condition. The reduction of the FRCC rating would lead to a decreased risk to key ecosystem components as a result

of fire. Wildland fire for resource benefit is allowed by the FMP's in all of the FMUs except the Ely/Lund/Duckwater WUI, the Ely/Lund Watershed WUI and Central WUI Suppression FMUs. Wildland fire for resource benefit would be allowed as prescribed within the administering federal agencies current FMP's. The Ely Shoshone tribal lands are defined Asset Protection Unit-Wildland Urban Interface (WUI)

Table 11 – FRCC ratings and ecological departure by ecological system.

	Ecological Departure	FRCC Rating
Alpine	4	1
Aspen Woodland	45	2
Aspen Mixed Conifer	53	2
Basin Wildrye	86	3
Black Sagebrush	79	3
Curl-leaf Mountain Mahogany Woodland	17	1
Limber-Bristlecone Pine Woodland	37	2
Limber-Bristlecone Pine Woodland-mesic	41	2
Low Sagebrush Steppe	33	1
Mixed Conifer Woodland	52	2
Montane Sagebrush Steppe-mountain	47	2
Montane Sagebrush Steppe-Upland	62	2
Montane Wet Meadow	52	2
Montane-Subalpine Riparian	59	2
Mountain Shrub	46	2
Pinyon-Juniper Woodland	18	2
Subalpine Spruce Forest	25	2
Winterfat	78	3
Wyoming Big Sagebrush	76	3

Implementation of the proposed action has been calculated utilizing computer modeling by The Nature Conservancy as has been presented within the “Ward Mountain Restoration Project: An ecological assessment and landscape strategy for native ecosystems in the Ward Mountain Landscape” and is summarized in the table below.

### *1. Direct and Indirect Impacts of the No Action Alternative*

Implementation of the no action alternative would result in no direct impacts to fuels and fire management within the project area. Indirect impacts would include a continuance of the current trend of ecological systems to move further away from the reference condition. This increased departure and corresponding increased FRCC rating would result in an increased risk of losing key ecosystem components as a result of wildland

fires that have potential to occur outside the fire regime for the respective ecological systems.

Table 12 – Ecological departure reduction as modeled by TNC.

	Pre-Treatment Ecological	Post-Treatment Ecological	Percent Change
Aspen Woodland	45	24	21
Aspen Mixed Conifer	53	25	28
Basin Wildrye	86	43	43
Black Sagebrush	79	36	43
Montane Sagebrush Steppe-Mountain	47	31	16
Montane Sagebrush Steppe-Upland	62	29	33
Montane-Subalpine Riparian	59	32	27
Mountain Shrub	46	27	19
Winterfat	78	47	31
Wyoming Big Sagebrush	76	61	15

## G. Noxious and Invasive Weeds

### 1. *Affected Environment*

There are 47 plant species designated as noxious by the State of Nevada (NAC 2012). Noxious weeds are highly invasive plants that generally possess poisonous, toxic, parasitic, invasive, and aggressive characteristics. Noxious weeds are capable of producing highly viable seeds, which can persist in the soil for several decades (D’Antonio and Meyerson 2002). The presence of noxious weeds signifies an area is at risk from a health and sustainability viewpoint, whether or not the landscape is disturbed or pristine (O’Brien et al. 2003). Infestations reduce the amount of available forage for wildlife and livestock, and have the ability to take over large areas of land, reducing valuable public land resources (NAC 2012).

The Humboldt-Toiyabe National Forest (USFS) utilizes an integrated pest management program that includes early detection, mapping, mechanical, biological, and herbicide treatments. Surveys conducted from 2007 through 2013 field seasons found majority of the project area is relatively free of noxious and/or invasive weeds with the exception of a few isolated infestations (Table 13). Most of the noxious weed infestations are concentrated along old road corridors and within low elevation sites. The Ely Ranger District in its entirety has not been surveyed so these acres are not inclusive. It can be expected to find other species and more locations of current species within the treatment units during implementation or in future inventories. Weeds occurring in small

populations across the project area include; Hoary Cress (*Cardaria draba*), Musk Thistle (*Carduus nutans*), Spotted Knapweed (*Centaurea biebersteinii*), Canada thistle (*Cirsium arvense*), Yellow Spine Thistle (*Cirsium ochrocentrum*), and Perennial Pepper weed (*Lepidium latifolium*). A large infestation of spotted knapweed has been observed near Ward Mountain Recreation site off Highway 6. These species typically dominate areas after major disturbances such as fire, overgrazing, or heavy recreational use. Inventory and treatment would continue under current management direction on an annual basis or as funding allows. Known noxious and invasive weed populations across USFS Lands within the Ward Mountain Restoration project area are depicted on Figure 7.

Table 13: Total Acres of Noxious and Invasive Weeds by Species occurring on USFS Administered Lands within Project Area

Common Name	Scientific Name	Total Acres in Project Area
Hoary Cress	<i>Cardaria draba</i>	61
Musk Thistle	<i>Carduus nutans</i>	239
Spotted Knapweed	<i>Centaurea biebersteinii</i>	193
Canada Thistle	<i>Cirsium arvense</i>	<1
Yellow Spine Thistle	<i>Cirsium ochrocentrum</i>	219
Perennial Pepper weed	<i>Lepidium latifolium</i>	<1
Total Acreage		712

The Bureau of Land Management (BLM) utilizes an integrated pest management program that includes early detection, mapping, mechanical, biological, and herbicide treatments. Surveys conducted during the 2008, 2009 and 2010 field seasons found a majority of the project area is relatively free of noxious and/or invasive weeds with the exception of a few isolated infestations (Table 14). Most of the noxious weed infestations are concentrated along old road corridors and within low elevation sites. The Ely Ranger District in its entirety has not been surveyed so these acres are not inclusive. It can be expected to find other species and more locations of current species within the treatment units during implementation or in future inventories. Weeds occurring in small populations across the project area include; Russian Knapweed (*Acroptilon repens*), Hoary Cress (*Cardaria draba*), Bull Thistle (*Cirsium vulgare*), Spotted Knapweed (*Centaurea biebersteinii*), and Perennial Pepper weed (*Lepidium latifolium*). Known Noxious and Invasive Weed populations across the Ward Mountain Restoration project area are depicted on Figure 7.



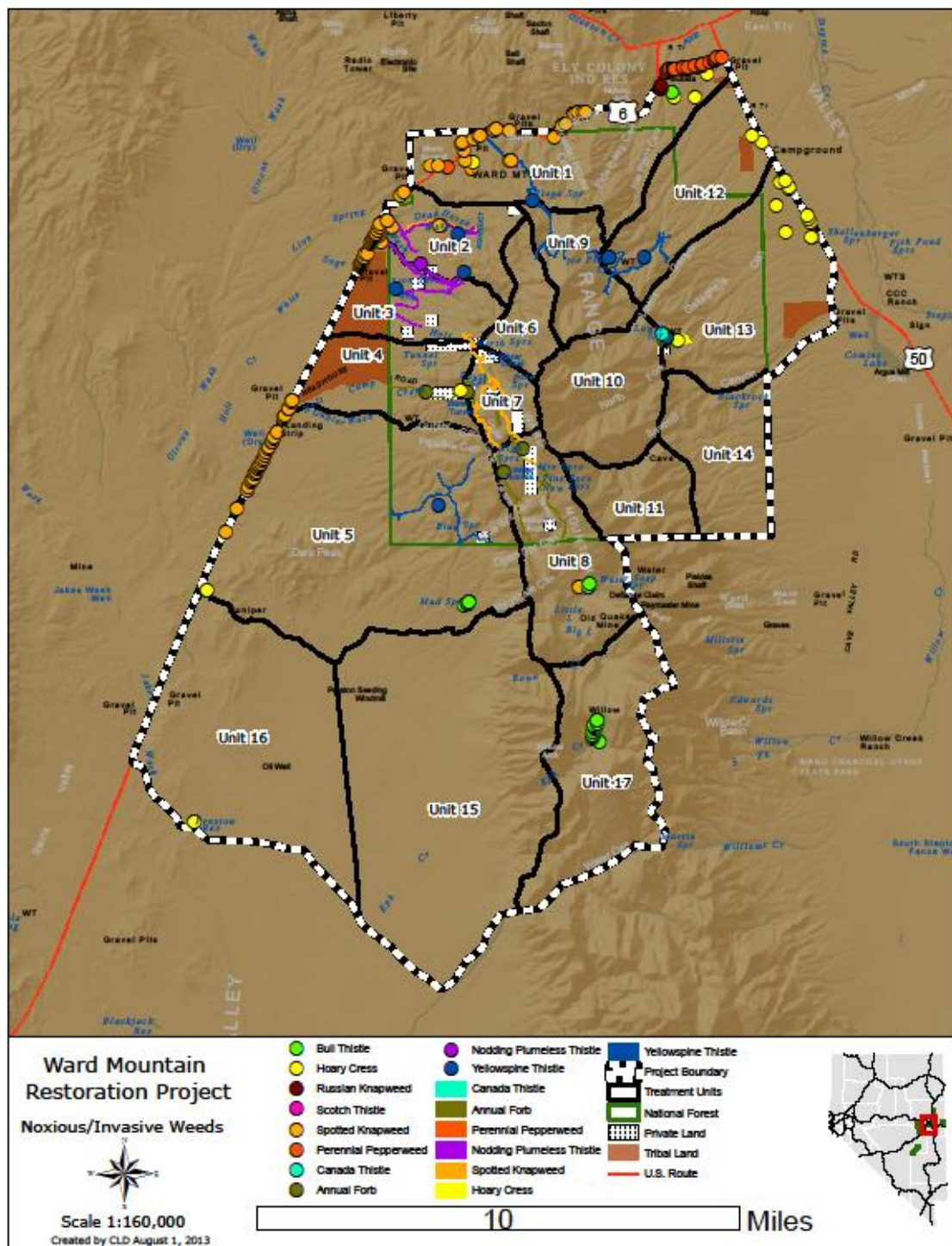


Figure 7 – Ward Mountain Restoration Project Noxious and Invasive Weeds

Table 14: Total Acres of Noxious and Invasive Weeds by Species occurring on BLM Administered Lands within Project Area

Common Name	Scientific Name	Total Acres in Project Area
Russian Knapweed	<i>Acroptilon repens</i>	0.01
Hoary Cress	<i>Cardaria draba</i>	0.22
Bull Thistle	<i>Cirsium vulgare</i>	0.21
Spotted Knapweed	<i>Centaurea biebersteinii</i>	0.82
Total Acreage		1.71

a) Cheatgrass

The impacts of cheatgrass have been widely documented. Chambers et al. (2007) citing several authors conclude that the magnitude of the invasion and effects on native ecosystems makes this possibly the most significant plant invasion in North America. Chambers et al. (2007) also discuss the various adaptive characteristics that make this annual plant so successful including prolific seed production, rapid root growth at low temperature, high nutrient uptake rates, and, most significantly, a ready adaptation to frequent fire. It is known that cheatgrass occurs at most elevations and along roadways across the vast majority project area. The location of cheatgrass is noted, but not officially mapped; therefore, total acres could not be calculated.

b) Spread of Noxious Weeds

Invasive and noxious weeds can be introduced into the area through several vectors such as road materials, mulch, and machinery. Noxious weeds can occupy existing or potential native plant habitat and degrade watershed functions. Trunkle and Fay (1999), Parendes and Jones (2000), and Gelbard and Belnap (2003) showed vehicles and roads were major vectors for noxious weed dispersal.

Native ungulates and livestock have predictable patterns of habitat selection; hence, animal-dispersed seeds are likely to be spread among environmentally similar sites. Consequently, invasive plants are often deposited in conditions similar to sites where such plants are already established (Howe and Smallwood 1982). Malo et al. (2000) concluded that the effect of seed input to the seed bank from ungulate transport may be low at large and medium-sized spatial scales, but very important at small scales and for colonization processes. Long distance seed dispersal between pastures may occur when cattle are rotated (Couvreur et al. 2004).

Seeds from noxious weeds can get stuck in ungulate hooves, be consumed, or become attached to the hair of wild horses, wildlife species, and livestock. As the animals travel around the district, the seeds can fall off the animals or be excreted in feces and can establish at new locations. Recreation can also affect the spread of noxious weeds. Seeds can become attached to people and domesticated horses in the same manner as wild horses and livestock.

c) Soil Disturbance

Another factor that can aid in the spread of noxious weeds is soil disturbance. Direct physical effects such as trampling, creation of bare soil can influence the success of native species (Augustine and McNaughton 1998); this influence can also affect the “invisibility” of plant communities by non-native species (Lonesdale 1999). The consumption of plant material such as grass leaves, forbs and browse reduce the amount of material that could be converted to litter. Substantial litter reduction can cause a subsequent increase in bare ground (Schulz et al. 1990). This increase in bare soil would aid in soil erosion and the lack of litter would favor the establishment of invasive plants (Sheley and Petroff 1999). However germination requirements for cheatgrass are enhanced when there is a litter layer, or when there is a rough microtopography (Young and Evans 1973, 1970). Cheatgrass seeds germination rate is lower when in direct contact with a hard soil surface, the microtopography that is needed can be caused by hoof depression on bare soil. Areas that are more prone to heavy disturbance include riparian areas (wet and dry meadows), Forest entry/ exit points, and livestock congregation sites; water and fence developments, salting sites, and bedding grounds.

Another function of soil disturbance is how it affects weed seed banks. Renne and Tracy (2007) observed that previous disturbance which resulted in weed seed bank augmentation increases pasture vulnerability to weed recruitment.

## 2. *Direct and Indirect Impacts of the Proposed Action*

Infestations of noxious weeds occur within most vegetative communities to varying degrees within the project area. Infestations in mountain brush, low sagebrush, and higher elevation mountain sagebrush communities are generally isolated and limited in size. Wyoming big sagebrush and lower elevation mountain big sagebrush communities have more infestations of larger size and are at greater risk for infestation of noxious weeds.

Potential direct effects of the proposed prescribed burning and mechanical treatments may be an increase in weed population by displacing native vegetation and associated ground-disturbing activities. Noxious weeds have a competitive advantage in areas where the native bunchgrasses and forbs are stressed and degraded, which can result in areas of disturbance. The simplest effect of some invasions is the displacement of native plant species by simple crowding, competition for resources, or other mechanisms (USDI BLM 1998). An aggressive identification and treatment program on the district has minimized the cumulative effects of noxious weeds on these upland vegetation communities. Known weed populations in the project area are currently small and found near roadways.

Potential indirect effects of the proposed action may be to promote resistance to weed invasion. Phase I, II and III pinyon-juniper are intermingled throughout the project area. The intermingling of the Phase I and II with Phase III across the project area would ensure that adjacent, native seed sources are available for understory recovery after potential treatment of the overstory fuels. Over the long-term, implementation of prescribed burns and other vegetative treatments should reduce the amount of bare ground and promote healthier understory and ecosystem communities; thus, giving desired plant species greater opportunity to compete with the noxious and invasive weeds.

### 3. *Direct and Indirect Impacts of the No Action Alternative*

The proposed project area has not burned for a number of years and has a good population of native plant species. Small populations of Cheatgrass (*Bromus tectorum*), Bull Thistle (*Cirsium vulgare*), Canada thistle (*Cirsium arvense*), Scotch Thistle (*Onopordum acanthium*), Perennial Pepperweed (*Lepidium latifolium*), Hoary Cress (*Cardaria draba*), Spotted Knapweed (*Centaurea biebersteinii*), Musk thistle (*Carduus nutans*), Russian knapweed (*Acroptilon repens*), and Yellow Spine Thistle (*Cirsium ochrocentrum*) are known to occur along several roadways within the project area. These undesired populations would continue to expand over time. The Humboldt-Toiyabe National Forest and Ely District Bureau of Land Management both utilize an integrated pest management program that includes early detection, mapping, mechanical, biological, and herbicide treatments. Infestations would continue to be monitored and treated with herbicides and other methods as permitted under current management direction. Inventory and treatment efforts would continue but may be limited due to funding or staffing constraints.

## H. Recreation

### *1. Affected Environment*

For the purpose of recreation management, the BLM identifies public lands as either special recreation management areas (SRMAs) or as extensive recreation management areas (ERMAs). In addition there are special recreation permit areas (SRPAS). SRMAs are areas in which more intensive recreation management is needed because of their high usage and where recreation is a principal management objective. ERMAs are all public lands outside SRMAs and other special designation areas. ERMAs are areas in which recreation is non-specialized and dispersed and does not require a specific management strategy or activity-level planning. Recreation may not be the primary management objective in ERMAs, and recreation activities are subject to RMP level restrictions. Special recreation permit areas are areas managed to provide opportunities for competitive motorcycle or vehicle special recreation permit events. The project area overlaps the Ely SRPA 3,857 acres, The Loneliest Highway SRMA 7,627 acres and Egan Crest SRMA 11,826 acres. There is a RAMP (recreation area management plan) for the Loneliest Highway SRMA 9/12/1991. There is not a Recreation Area Management Plan for the Egan Crest SRMA, nor are there any proposed future actions.

FS-Ward Mtn. Recreation Site is a large developed recreation site. This site consist of several single-family campsites, double-family campsites and three large group sites that can accommodate up to 100 or more people. Multiple access points for trails are found throughout the campground with the main trailhead located at the eastern most side. All campsites are equipped with picnic tables, campfire rings, grills, vault toilets, and drinking water.

There are no Developed BLM Recreational Facilities within the project area and Recreational activities in and around Ward Mountain are primarily dispersed. Recreation consists of off-highway vehicle use, hiking, hunting, camping, cross-country skiing, horseback riding, rock climbing, and mountain biking.

Dispersed recreation can occur on undeveloped BLM and Forest Service lands that are open to the public for camping and general recreation. These opportunities do not include any developed amenities or recreation facilities. Camping is permitted on BLM and Forest Service lands throughout the County. (BLM) There is a 14-consecutive-day limitation on camping within a 28-day period (BLM 2008a). (FS) Camping or possessing camping equipment in excess of fourteen (14) days in any thirty (30) day consecutive period. [36 CFR 261.58(a)]

Dispersed recreation activities, such as bird watching, hiking, plant gathering, hunting, camping, occur on Ely Shoshone lands.

Hunting is one of the more popular dispersed outdoor recreation opportunities in the area. There is one NDOW game management units (221) within the project area. Within this unit, big-game species, including elk, mule deer, and pronghorn antelope, are hunted by permit. Hunts for these game species occur from August to December: mule deer hunts occur from August to November, elk hunts occur from August to December, and pronghorn hunts occur from late August to early October. In addition to the above big-game species, mountain lion permits are available for purchase over the counter, and other fur-bearing animals can be hunted or trapped with a trapping license. There are also opportunities for hunting upland game such as chucker, sage-grouse, and dove.

OHV travel is limited to existing roads and trails throughout White Pine County by the BLM RMP/FEIS (BLM 2008a) and is limited to designated roads and trails by the Forest Service Travel Management Plan (Forest Service 2009).

## 2. *Direct and Indirect Impacts of the Proposed Action*

The proposed vegetation treatments could have an initial negative impact on recreation that could last for a number of years. However, in the long term the proposed vegetation treatments are expected to have positive effects.

As the vegetation treatments are implemented, recreationist could be negatively impacted by machinery use and noise (tractors, bulldozers, chainsaws, vehicles and helicopters) associated with each treatment. Areas could be closed during treatment implementation such as prescribed fire or aerial spraying for chemical treatments. Upon completion of work at each treatment and depending on what type of treatment was implemented the negative impact could be anywhere from minimal to more extreme. Mechanical treatments of pinyon pine and juniper would have an initial effect on the recreationist's experience of "naturalness" and "sense of place". If fencing is used to protect a treatment, there is a slight inconvenience of navigating it; however fencing would not restrict access. The use of fencing would not preclude foot travel. The impacts to the recreationist would initially be mostly visual and associated with the recreationists "Sense of Place" and "Naturalness"

There is an expectation that in the long term the benefits of the proposed vegetation treatments would have a positive effect on recreation. Previously low diverse vegetative communities would now have greater species (flora and fauna) diversity. Hiking through areas that were once solid stands of pinyon pine and juniper would now be more open

and enjoyable. New view-sheds would be made available in areas that had none. Hunting opportunities of large and small game would benefit from the greater amount of new forage and new habitat that would be created.

The Ward Mtn. campground with the main trailhead and multiple access points for trails will benefit from the vegetation treatments. These treatments will reduce the fuel loadings which in turn provide better protection by reducing the severity and intensities of a wildfire. The proposed action would not affect the opportunity for primitive, semi-primitive non-motorized and semi-primitive motorized recreation within the IRAs. No change in access would occur as a result of the project. Some impacts to the ability of recreating public to access the area would occur during the implementation of the proposed activities. Routes and trails within a particular project area would be closed to use during the project activity. However, these impacts would be short in duration and generally the users would have other points to access to utilize during these activities.

### 3. *Direct and Indirect Impacts of the No Action Alternative*

There would be no direct or indirect impacts of the proposed action upon recreational activities within the project area.

## I. Soils and Water

### 1. *Affected Environment*

#### a) Soils

Soils within the watershed can be characterized as deep, well-drained loams that vary in terms of coarse constituent content as slope and position on the landscape increases. The nearly flat valley bottom soils have silt loam surface horizon textures and silty clay loam subsurface horizon textures. The valley fill is moderately alkaline and reflects the continuous deposition of very fine materials mobilized by wind and water forces.

The hillside benches, or otherwise known as alluvial fans and piedmonts, have shallow to moderately deep, well-drained soils that range in textural class from very fine, sandy loam to gravelly loam. The fan and piedmont soils overlay a soil horizon ranging from about 10 inches to 20 inches deep known as a duripan layer. A duripan has a massive soil structure which stops root and water movement from penetrating and moving through the layer. Duripans form when silica, calcium carbonate, and some other constituents essentially cement together to form an impermeable layer.

The very steep hillside and mountain soils are very gravelly or very cobbly loam with coarse fragments of limestone, shale, slate, and sandstone. The Parent Material for these soils are readily apparent as seen in the very large boulder-sized pieces of andesite, quartzite, conglomerate, limestone, dolomite, and shale in the surrounding mountains.

b) Water

Perennial stream systems within the watershed possess both lotic and lentic riparian areas in their basins. Lotic types are associated with flowing water and adjacent to stream banks. Lentic types are usually associated with non-flowing riparian systems that may or may not have surface water such as vegetation around ponds or vegetation in meadows.

The lotic riparian areas range from moderately disturbed systems in the valley bottom where stream channels were altered to accommodate other water needs. The riparian vegetation in these areas is dominated by rush, sedge, grasses, and with willows common. Higher up the piedmonts within the old confined stream channels the lotic systems are dominated by grasses and sedges with clumps of willow common. Water Birch may be found on stream banks that were altered. In the headwaters of the streams and some intermittent and ephemeral drainage, quaking aspen stands can be found either associated with lentic riparian areas or as a lone stand of trees. Lentic riparian areas associated with stream valley systems tend to be dominated by grasses with rush and sedge components and willows common. These areas range in size from isolated patches which are only tenths of acres to stringers of vegetation which follow the stream for miles and are hundreds of feet wide. Lentic riparian areas are also associated with springs throughout the watershed. Many small, unnamed springs flow or seep and have small areas of riparian vegetation develop in and around the saturated soil

The Murray Watershed that is administered on National Forest System lands incorporates all drainages leading into the municipal water source, Murray Springs. The City of Ely no longer uses the water source at Murray Springs to provide drinking water to the city. The City of Ely has been using newly installed wells across town to provide the drinking water to the citizens of Ely.

2. *Direct and Indirect Impacts of the Proposed Action*

a) Soils

(1) *Tree Removal or Woodland Restoration*

Chaining and mastication would disturb soils by directly compacting and displacing surface and subsurface horizons, which could lead to an increased risk of wind and water



erosion. Chaining operations would have the greatest risk of compacting soils. The use of heavy equipment making multiple passes across treatment areas, up-rooting vegetation, exposing soil to depths potentially below the rooting zone, and displacing soil by altering its position within the soil horizon or upon the landscape. The degree to which soils are compacted is a function of the depth of organic material and vegetation at the surface upon which the vehicles travel and the pressure the equipment exerts on the soil surface. The degree to which soil is exposed or uncovered is a function of the type of chain employed and whether one pass or two passes are employed. Displaced and exposed soil could be susceptible to wind or water erosion until exposed soil is re-vegetated. Soils compacted during chaining could show long-term effects such as a change in soil structure and slower water infiltration rates. The amount of soil compaction in any treatment unit is expected to be small given the occurrence only appears where the equipment was used, which accounts for an overall small percentage of a treatment unit.

Mastication treatments would have compaction and displacement effects to an overall lesser degree than the chaining treatments due to use of lighter equipment and a greater retention of standing vegetation and residual organic material.

Moving and stacking of biomass whether for burning or fuelwood disposal could lead to limited and localized areas of soil displacement, especially where the equipment may make frequent turns and where soils may become dished-out. The compaction effects would be lessened further as equipment use occurs over tree and shrub material and may not occur at all if material is thick enough to support the equipment and disperse the ground pressure effects. Soil disturbance effects are expected to be short-term until vegetation re-establishes on bare soils.

Fire, as a follow up treatment to mechanical treatments, whether jackpot or broadcast, could leave areas of soil hydrophobicity if fires burn too severely. Large slash piles may exhibit small areas of hydrophobic soil underneath and adjacent to the piles due to high temperatures generated while burning. Sites exhibiting hydrophobic characteristics are expected to be rare and to account for very minimal land area in treatment units which are burned as a secondary treatment. General conditions needed to form hydrophobic soils are a thick litter layer before the fire, sandy texture soils, and a severe slow-moving fire. Conditions in the proposed treatment units are coarse loam soils, and thin organic layer component in the soil horizon.

### *(2) Mechanical Methods for Sagebrush Restoration*

The three types of equipment used for mechanical sagebrush restoration require being pulled or dragged by either a tractor or bulldozer. Soil compaction is a risk, especially if the mechanical method is a secondary treatment following a chaining primary treatment. The Dixie harrow and mower operations would have a lower risk of soil compaction whether directly or compounded following a chaining operation. The probable use of a rubber tired tractor with the harrow or mower reduces the likelihood of soil effects. Roller chopper use would be expected to have the greater risk of soil compaction with the use of a bulldozer to pull the equipment across treatment units. Dixie harrow would rake the surface vegetation and potentially the soil surface to the set depth of the spiked teeth. Further soil disturbance could occur if dragged material gouged or scoured bare or exposed soil. Mower use is not expected to have effects to soil resources. Roller chopper use would directly affect the soil surface if the chopper was operated over bare or exposed soils. Mechanical methods could have long-term disturbance effects to soil resources if operated upon bare or exposed soil. Displacement of surface organic horizon or intermixing of inorganic subsurface horizons with organic surface horizons may affect soil productivity in localized areas.

### *(3) Chemical Treatments*

Proper use of chemicals to affect vegetation would not directly have soil effects. Loss of ground cover vegetation may affect soil retention or soil stability. It is expected that the efficacy of chemical treatments across landscape settings would not lead to increased potential for soil erosion or soil loss. Chemical treatment of target species would leave sufficient ground cover from non-target vegetation to retain soil resources.

### *(4) Prescribed Fire*

Burning treatment units to reduce fuel loading or biomass and to attain other resource targets would follow guidelines in an established project specific burn plan. The creation of control lines and fire lines would necessitate the exposure of bare mineral soil. Lines could be areas of increased risk to soil erosion if rehabilitation does not occur prior to the onset of the first precipitation event. Loss of target vegetation from prescribed burning is not expected to result in a total elimination of organic texture from hillsides or the ability of the natural system to buffer sediment if erosion does occur. Understory vegetation and heterogeneous topography are expected to naturally buffer and protect hillsides from soil and water movement prior to the establishment of new or release of existing plants. The risk of creating hydrophobic soil conditions is identical to that described for use of fire as a secondary treatment in Tree Removal or Woodland Restoration.

*(5) Aspen Restoration*

Manual conifer tree cutting would not affect soil resources directly. Fuelwood cutting if undertaken during wet soil conditions could be a risk factor. Prescribed fire use in aspen stands would have effects similar, but typically on a smaller scale, to that described in Prescribed Fire.

*(6) Seeding*

Use of seeding as a treatment would tend to stabilize and protect soils, especially where sown on bare or exposed soil. Establishing target species ground cover is expected to hold soil on slopes and buffer against erosion as well as working as an important part of soil health by organic matter integration.

*(7) Fencing*

Use of fences would not directly affect soil resources. Fencing areas to exclude entry into sensitive areas could protect soils from trampling until target vegetation is established and capable of handling intended use. The effect from construction and maintenance would be temporary in nature.

*(8) Wildland Fire for Resource Benefit and the Fire Management Plan*

Use of Wildland Fire for Resource Benefit would rely on circumstances as defined in the Fire Management Plans before application to the project area. Effects to soil resources are expected to be similar to those described in Tree Removal or Woodland Restoration and Prescribed Fire section. Wildland fires can be less predictable and thus have a higher risk associated with it..

*(9) Water*

Seeps, springs, and meadow complexes within the Ward Mtn. project area are limited due to the topography and limited amount of water sources.

Riparian areas would be buffered during ground disturbing treatments, excluding prescribed fire. Chemical treatment buffers would range from 25 feet near drainages if applied by hand, 100 feet if applied from ground-based motorized equipment (e.g. ATV), and to 300 feet if aerially applied. BLM is the only agency authorized to apply chemicals aerially at this time. Site specific determination of appropriate buffers for drainage features, riparian systems, and water collection points would occur prior to treatment.

Mechanical treatments and hand felling operations could occur adjacent to riparian areas. Aspen regeneration actions could occur near or inside riparian areas, which would include conifer removal using hand-cutting methods and prescribed burning.

Chemical and mechanical treatments near riparian zones are not expected to affect the function or resilience of the systems. Buffers utilized to protect drainages that may possess or flow towards riparian systems are expected to capture and hold any materials used or liberated during mechanical or chemical treatments and preclude their introduction into the riparian systems. Any materials that do enter drainages or riparian systems would have negligible and lead to immeasurable effects on riparian resources. Removal of conifer trees and regeneration of aspen trees in or near riparian systems would retain groundwater for riparian species use and possibly help to retain groundwater levels closer to the ground surface. Reducing upland species competition in and around riparian zones would reduce competition for limited water resources. The proposed action does not include construction of any roads within the project area. The treatment areas are on variable terrain (slopes from 3 - 80%). Treatments would occur throughout the year as conditions and design features allow for. Skidding or other activities that would tend to loosen soils would avoid steep slopes. Skidding of materials across drainages would be avoided whenever feasible. Some project areas would be accessed by machinery via cross-country travel and would be subsequently rehabilitated once work in the area has finished. Vehicles accessing the project area via cross country travel would be outfitted with rubber tracks vs. metal tracks in an effort to reduce the overall impact to the soils in the area being accessed. Short term risks from implementation activities. These are minimized by the implementation of Best Management Practices and design features.

### 3. *Direct and Indirect Impacts of the No Action Alternative*

#### a) Soils

There would be no short-term effects to soil resources. There could be a long-term effect to soil productivity from the slow change from shrub-grassland dominated systems to shrub-tree dominated systems. In other words, there could be a change in the timing and processes involved in the way nutrients and organic matter enter the soils; finer vegetation potentially changing to coarser vegetation or shorter nutrient cycling times versus potentially longer times. The associated loss of understory species would result in an increased amount of soil loss due to erosion.

b) Water

Riparian systems would continue to be surrounded by upland shrub and tree species in competition for limited water resources in the short-term. Aspen stands and riparian habitats could become rarer in the long-term.

## J. Vegetation

### *1. Vegetation*

a) Affected Environment

Vegetation within the Ward Mountain Restoration Project area represent a broad range of vegetation from high elevation limber and bristlecone pine to salt desert shrub. Past management actions within the planning area has led to an alteration of fire cycles leading to an increase in fuel build up and continuity of fuels, causing an increase in the potential for large uncontrollable fires. Vegetation within the area has been categorized in to biophysical setting (BPS) models describe the vegetation, geography, biophysical characteristics, succession stages, disturbance regimes and assumptions for each vegetation type (Havlina et al, 2010). For each BPS model reference conditions have been developed to describe the distribution of seral stages within a landscape prior to European influence. Seral classes represent a scale of vegetative succession as a community progresses from post-replacement to later successional states.

The current condition of Ward Mountain's ecological systems varies widely in terms of departure from their natural range of variability (NRV). Of the 21 ecological systems (BPS models), five are slightly departed from their NRV and include pinyon-juniper woodland, curl-leaf mountain mahogany woodland, low sagebrush steppe, subalpine spruce forest, and alpine. Four systems are highly departed and include black sagebrush, Wyoming big sagebrush, basin wildrye, and winterfat. The remaining 10 systems are moderately departed. Ecological departure was not calculated for two systems that are minimally represented in the landscape (see Table 11 – FRCC ratings and ecological departure by ecological system).

b) Direct and Indirect Impacts of the Proposed Action

The direct and indirect impacts of the proposed action upon vegetation within the treatment area are presented within the Fuels and Fire Management section above.

Impacts in summary consist of a reduction in departure of the ecological systems being treated bringing them closer to reference condition.

c) Direct and Indirect Impacts of the No Action Alternative

The direct and indirect impacts of the no action alternative upon vegetation within the proposed treatment area are presented within the Fuels and Fire Management section above.

2. *Sensitive Plants (FS)*

a) Affected Environment

The analysis area covers approximately 39,264 acres of National Forest Service lands on the Ward Mountain portion of the Ely Ranger District. The average elevation of the Upper Terrace portion of the project area is approximately 9,300 feet while the average elevations the North East and South East portions range between 7,200 and 7,700 feet. Annual precipitation can vary between 8 and 50 inches a year. Plant communities include sagebrush steppe, mountain shrub, aspen, subalpine fir, whitebark and limber pine, and riparian/wetlands.

There are 23 Region 4 Forest Service Sensitive Plant Species with potential and/or occupied habitats on the Ely Ranger District. Nevada Natural Heritage Program Occurrence database (NNHP, 2005); Natural Resource Information System (NRIS) Threatened, Endangered, and Sensitive Plants (TESP) database; and the Humboldt-Toiyabe Rare Plant database through 2009. The United States Department of Agriculture Forest Service Regional Forester's (R4) threatened, endangered and sensitive species list (updated 2011), the Rare Plant Atlas (Morefield, 2001), the Humboldt National Forest Sensitive Plant Field Guide (Anderson et al., 1991), existing databases including state databases (NNHP, 2005), and current literature have been reviewed to determine potential habitat requirements for the threatened and endangered species listed on the FWS species list and the R4 sensitive species (TES).

Potential habitat for Eastwood milkweed (*Asclepias eastwoodiana*), broad-pod freckled milkvetch (*Astragalus lentiginosus* var. *latus*), currant milkvetch (*Astragalus uncialis*), upswept moonwort (*Botrychium ascendens*), dainty moonwort (*Botrychium crenulatum*), slender moonwort (*Botrychium lineare*), Goodrich biscuitroot (*Cymopterus goodrichii*), Snake Range whitlow-grass (*Draba oreibata* var. *serpentina*), Pennell's draba (*Draba pennellii*), Cave Mountain fleabane (*Erigeron cavernensis*), waxflower (*Jamesia tetrapetala*), Hitchcock's bladderpod (*Lesquerella hitchcockii*), Maguire's bitterroot

(*Lewisia maguirei*), Tunnel Springs beardtongue (*Penstemon concinnus*), Mount Moriah beardtongue (*Penstemon Moriahensis*), whitebark pine (*Pinus albicaulis*), Marsh's bluegrass (*Poa abbreviata*), sagebrush cinquefoil (*Potentilla johnstonii*), Nevada primrose (*Primula cusickiana*), Nachlinger's catchfly (*Silene nachlingerae*), Jones' globemallow (*Sphaeralcea caespitosa*), Currant Summit clover (*Trifolium andinum* var. *podocephalum*), and rock violet (*Viola lithion*) within the project area was surveyed and no individuals were found.

b) Direct and Indirect Impacts of the Proposed Action

Rare plant species may be adversely impacted by mechanical treatment methods by reducing the quality or extent of their habitats. Potential direct effects to plant species would include the crushing and killing of individual plants if they occur within the path of heavy machinery.

The potential indirect effects mechanical treatment methods are numerous. Heavy machinery can alter the physical and chemical environment in the same ways as other overland travel by increasing dust deposition, increasing soil compaction, increasing light exposure (by decreasing vegetation cover), changing the pattern of run-off and sedimentation, and altering soil nutrient levels (Trombulak and Frissell 2000). With the same respects, the path of heavy machinery may lead to the loss and fragmentation of occupied habitat (Wilcove et al. 1998; Kwak et al. 1998), alteration of vegetation communities, loss of pollinators, changes in seed set, disruption of the seed bank (Kwak et al. 1998), decreased plant vigor, loss of the individual plants, increased weed density and distribution through the spread of weed propagules, and the spread of disease (Wilcove et al. 1998).

Non-native plants can spread quickly and affect the amount and distribution of native plant species. Overland travel with any machinery can often function as vectors for the spread of noxious weeds and other invasive species (Trombulak and Frissell 2000; Forman and Alexander 1998). This can be particularly damaging to populations of sensitive plants as invasive species tend to outcompete natives. Infestation of certain weed species often shorten the fire disturbance interval to a frequency for which sensitive species populations have not evolved and cannot adapt quickly enough to survive. Even if the machinery is completely cleaned prior to use, disturbance of soil surfaces and vegetation can set the stage for weed establishment by other vectors at later dates. These effects must be weighed against the benefits of mechanical treatments. Although chaining is less expensive than other mechanical methods and chained areas can exhibit a flush of increased grass production soon after treatment, the regrowth and release of young trees

cancels out the benefit of early forage grains (Aro 1971). Small trees that are missed by cabling or chaining “grow two to three times as fast after release from the dominance of larger overstory trees (Arnold et al., 1964)”

c) Direct and Indirect Impacts of the No Action Alternative

Under the No Action Alternative, resource conditions are expected to stay the same with continual pinyon and juniper encroachment into sagebrush communities and conifer encroachment into aspen stands. Over time woodland expansion within the project area would continue to diminish and fragment the sagebrush and mountain brush communities, decreasing shrub and herbaceous understory. Under the No Action Alternative, current management plans would continue to guide management of the project area. No treatments would be implemented to accomplish project goals. There is a continued risk of habitat alteration resulting from wildfire and noxious and invasive plants.

## K. Visual Resources

### 1. *Affected Environment*

Visual resources are identified through the visual resource inventory. This inventory consists of a scenic quality evaluation, sensitivity level analysis and a delineation of distance zones. Based on these factors, BLM-administered lands are placed into four visual resource management (VRM) classes: VRM Class I, II, III and IV. Class I and II are the most visually valued, Class III represents a moderate value and Class IV is of the least visual value. VRM classes serve two purposes: (1) as an inventory tool that portrays the relative value of visual resources in the area, and (2) as a management tool that provides an objective for managing visual resources.

The proposed project area occurs in three VRM classes. The percentage of Proposed vegetation treatments in regards to VRM Class is as follows: 43% class II, 45% class III and 12% class IV.

The Class II VRM objective is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.



The VRM Class III objective is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the landscape. Changes caused by management activities may be evident and begin to attract attention, but these changes should remain subordinate to the existing landscape.

The VRM Class IV objective is to allow for management activities that involve major modification of the existing character of the landscape. The level of contrast can be high – dominating the landscape and the focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements of the characteristic landscape.

(FS) Based on the LMP this proposed project is within the managed for the Visual Quality Objectives for preservation. Management activities remain visually subordinate to the characteristic landscape when managed according to the partial retention visual quality objective. Activities may repeat form, line, color, or texture common to the characteristic landscape but changes in their qualities of size, amount, intensity, direction, pattern, etc., remain visually subordinate to the characteristic landscape. Activities may also introduce form, line, color, or texture which are found infrequently or not at all in the characteristic landscape, but they should still remain subordinate to the visual strength of the characteristic landscape. The project area consists of typical basin and range topography. The major land form in the project area is the Egan Range rising out of the White River Valley on the West and South Steptoe Valley on the East. Vegetation is typical of that found in the Great Basin eco-region, with grey/green sagebrush and grasses on the lower slopes that transition into the dark grey-green of the pinyon pine and juniper woodlands. The Eastern slope is predominantly pinyon pine and juniper on the lower flanks with the mid-slope containing numerous triangular/trapezoidal faceted slopes of grass and shrubs and the upper slopes are a mix of both. The Western slope is predominantly pinyon pine and juniper on the lower flanks. From midslope up there are some areas containing shrubs and grasses and the upper slope is a large rectangular continuous area that is predominantly grass and shrubs. The Western slope also has large horizontal to diagonal greyish-tan layers of exposed limestone. The northern slope is predominantly pinyon pine and juniper on the lower flanks and the center but has grass and shrub covered slopes on the east and a large grass and shrub covered valley/meadow on the west. Predominant natural features of the characteristic landscape are mosaic burned and disturbed patches within the landscape resulting from historic fires and past land management activities. There are a network of roads, two tracks, range improvements, historic mining operations, power-lines, fence-lines, and vegetation treatments present. The area is however substantially natural in character.

All treatments on Ely Shoshone lands could temporarily degrade the visual aesthetics of the treated areas. However, treatments would be distributed across the woodland areas and the woodland areas would not be treated all at once.

## 2. *Direct and Indirect Impacts of the Proposed Action*

A contrast rating work sheet was completed at Key Observation Points (KOPs). The KOPs are located on; Hwy 6, Hwy 6-50-93, Cave Valley Rd, the city of Ely and the town of Lund. In addition there are other highly traveled main bladed gravel and two track dirt roads that were taken into consideration. The KOPs were selected for the higher amounts of vehicle traffic in the project area associated with Hwy travel, grazing, recreation as well as the view gained from where people live.

The proposed vegetation treatments would have little to no effect on either the Land or the Structures. Changes in vegetation would be the most affected element (Form, Line, Color, and Texture). There would be a weak to no degree of contrast to the land and structures. Depending on the treatment, vegetation, and how the biomass is managed there would be a low to strong degree of contrast to the vegetation element. The visual appearance of treatments over time depends on the type of treatment and multiple environmental and climatic variables. Depending upon these variables some treatment may become inconspicuous within a short time frame (1-5 years) while others may remain noticeable for longer periods of time.

Mastication would depend on the type of masticator that is used and how the biomass is managed. A machine that fully masticates the tree would leave very little pieces of biomass that would be less noticeable; the contrast would be moderate to strong and would become less noticeable in 5-10 years. A masticator that does not fully and or cleanly masticate the tree would be visually more conspicuous, the contrast would be strong. In addition a masticator that leaves a large amount of large pieces of biomass might take anywhere from 10-25 years to become less noticeable.

Chaining of pinyon pine and juniper would also be noticeable for as much as 25 years. The contrast created is strong due to the production of large clumped piles of whole toppled trees, exposed roots and disturbed earth. For visual resources, chaining of pinyon pine and juniper is the most noticeable.

In summary, the area is a classic eastern Nevada landscape dominated by the typical basin and range topography, which lends to feelings of vastness and open space. None of

the proposed treatments would dominant the view. Some of the treatments would initially attract attention. The treatments are not a static permanent feature. Although the initial disturbance may be high contrast to existing vegetation, it is temporary. As long as the proposed action repeats the basic elements of form, line, color and texture as well as adhere to the design features listed in Ch-2 the Proposed Action would conform to the appropriate VRM class objectives, the Ely RMP and the FS LMP

### 3. *Direct and Indirect Impacts of the No Action Alternative*

Implementation of the no action alternative would not have any direct or indirect impacts on visual resources within the project area.

## L. Livestock Grazing

### 1. *Affected Environment*

Seven active allotments are included within the project area; three administered by the Forest Service and four by the Bureau of Land Management (see Table 15 and 16 below). Four livestock operators are permitted to graze on BLM allotments within the proposed project area; two of these operators also hold permits to graze on USFS allotments within the project area. In the recent past, annual lease agreements to graze livestock have been held on the Tribal Land known as Parcel #3. Depending upon which treatment option is employed, a variety of adjustments would be required to lessen impacts on treated areas or units by livestock. With at least two years rest from livestock grazing following prescribed fire or reseeding treatments, it is anticipated that the recovery would enhance the range condition based on increased ground cover and diversity of the recovering plant communities.

Table 15: USFS Grazing Allotments and Permitted Use within the project area

ALLOTMENT NAME	TYPE	ON DATE	OFF DATE	NUMBER OF ANIMALS	HEAD MONTHS
West Ward	Cattle	6/1	10/10	211	916
East Ward	Sheep	7/1	7/27	1000	888
Terrace	Sheep	7/28	9/7	912	1,259
Permitted Livestock Grazing Totals				2,123	3,063

Table 16: BLM Grazing Allotments and Permitted Use within the project area

ALLOTMENT NAME	TYPE	ON DATE	OFF DATE	NUMBER OF ANIMALS	AUM
Dark Peak	Sheep	4/1	11/1	761	1065
	Cattle	4/1	11/1	109	763
Lake Area	Sheep	5/1	11/1	1610	1743
	Cattle	5/1	11/1	228	1234
West Schell Bench	Sheep	5/1	11/1	1141	1388
White Rock (West)	Cattle	3/1	2/28	485	2814
Permitted Livestock Grazing Totals				4,334	9,005

The current condition of Ward Mountain's ecological systems varies widely in terms of departure from their natural range of variability (NRV) as presented in the vegetation section above. Of the 21 ecological systems, five are slightly departed from their NRV and include pinyon-juniper woodland, curl-leaf mountain mahogany woodland, low sagebrush steppe, subalpine spruce forest, and alpine. Four species are highly departed and include black sagebrush (*Artemisia nova*), Wyoming big sagebrush (*Artemisia tridentata ssp. wyomingensis*), basin wildrye (*Leymus cinereus*), and winterfat (*Krascheninnikovia lanata*). The remaining 10 systems are moderately departed. Ecological departure was not calculated for two systems that are minimally represented in the landscape.

Current range conditions on BLM administered lands are typical of vegetation found in the Intermountain Great Basin. In the higher elevations, the landscape consists of pinyon-juniper dominated woodlands, with some perennial grass understory. In the lower elevations, there is a mix of native range with a number of crested wheatgrass seedings projects from the 1960's. Jake's Wash, a predominant landscape feature on the west side of the project area, features a substantial population of winterfat (*Krascheninnikovia lanata*).

Higher elevations of Forest Service allotments have been used much lighter by livestock due to steep terrain and a shorter growing season. When accessible, watering areas and areas within close proximity to water have been grazed heaviest. Over the years, sensitive riparian sites, especially in lower elevations, have experienced significant conifer establishment. As a result available forage across the Forest Systems lands for both wildlife and livestock has been reduced

Livestock grazing on the allotments within the project area are in compliance with the terms and conditions of the current grazing permits. In allotments where it is feasible, the permittees use a rotation system to allow rest in various portions of the allotments and/or pastures. Permittees also make use of authorized water haul sites to encourage livestock use in areas previously not utilized.

Existing range improvements within the proposed project area would remain in place and be maintained in conformance with agency standards.

## 2. *Direct and Indirect Impacts of the Proposed Action*

No reductions or increases in permitted use area being proposed at this time. Mandatory rest periods would be implemented by agreement and/or decision after coordination with permittees to minimize annual impacts to grazing operations, while still meeting BLM and Forest Service restoration requirements.

The mandatory rest period would be for a minimum of two years or until vegetation management objectives have been met as identified within the grazing design features under the proposed action. The rest period may be extended pending the rate of progress towards vegetative establishment. The rest period is necessary in order to ensure the establishment, protection, and long-term viability of the vegetation enhancement projects. The overall impacts to the grazing operations on the allotments would be minimal. Livestock would be herded or otherwise controlled to avoid the treatment units while the units are being rested or deferred. Where it is feasible, temporary fencing may also be utilized to facilitate rest periods.

## 3. *Direct and Indirect Impacts of the No Action Alternative*

Under the No Action Alternative, there would be no short term impacts to the current livestock grazing on the allotments. In the long term, forage species for livestock would continue to diminish as pinyon pine, juniper, sagebrush, and undesirable annuals increase in density and desirable grasses and forbs decline. Forage quality and quantity would decline over the long term which may result in reductions to livestock grazing permits.

# M. Climate Change

## 1. *Affected Environment*

According to the Global Climate Change Impacts in the United States report produced by the U.S. Global Change Research Program, the Ward Mountain Restoration Project is located in the Southwest region of the United States. The report states that recent warming has occurred in this region more rapidly than in other areas of the nation. The warmer temperatures and drier conditions that are being observed in some areas of the Southwest are predicted to potentially alter the vegetative distribution across the region, including possible increases in invasive species. The increased temperatures are also predicted to support increased wildfire activity.

## 2. *Direct and Indirect Impacts of the Proposed Action*

The Proposed Action incorporates several vegetation treatments targeted at reducing dense fuel loads and restoring vegetation closer to the desired future condition as prescribed in the agencies respective management plans. This may serve to counteract some of the potential increases in wildfire risk if, in fact, overall warming and drying occurs within the project area as predicted. The removal of the trees in large areas would eliminate some of the existing shading, but would allow additional moisture and space for growth for the remaining sagebrush and other smaller vegetation. The carbon sink properties lost with any tree removal may at least be partially offset by the increased vigor and abundance of the sagebrush and smaller vegetative species. The remaining vegetation treatments are targeted at improving regeneration rates in existing stands of high elevation tree species or rejuvenating aging stands of sagebrush and would not be impacted as directly by any of the predicted trends. Exact quantification of any of these impacts relative to the overall warming trend in the region is not possible due to the lack of site-specific research and general controversy surrounding the topic of climate change however, the scale and lengthy timeframe of expected implementation ensures that effects resulting from this project are well under established thresholds. The proposed range improvements are not anticipated to be affected by any of the predicted climate change patterns.

## 3. *Direct and Indirect Impacts of the No Action Alternative*

The No Action Alternative does not include any vegetation treatments and would not potentially counteract any of the trends predicted to support increased risk of wildfires. However, exact quantification of any of these impacts relative to the overall warming trend in the region is not possible due to the lack of site-specific research and general controversy surrounding the topic of climate change.

## N. Cumulative Effects

As required under the NEPA and the regulations implementing NEPA, this section analyzes potential cumulative impacts from past, present, and reasonably foreseeable future actions combined with the Proposed Action and alternatives within the area analyzed for impacts to the resources for which cumulative impacts may be anticipated. A cumulative impact is defined as “the impact which results from the incremental impact of the action, decision, or project when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 Code of Federal Regulations 1508.7)

Reasonably foreseeable future actions (RFFAs) that may have an impact on the resources analyzed in detail include the continuance of land management actions that are currently occurring and approved within the analysis area such as grazing, dispersed recreation, minerals exploration, etc. Reasonably foreseeable future actions (RFFAs) that have the potential to contribute to the direct and indirect impacts of the proposed action and no action alternative include:

- South Steptoe Valley Watershed Restoration Plan – This plan encompasses approximately 200,000 acres of land to the south-east and adjacent to the Ward Mountain Restoration Plan Project area. The South Steptoe Valley Watershed Restoration Plan includes vegetative treatments similar to those proposed within the proposed action.
- Lowry Hazardous Fuels Reduction and Ecosystem Enhancement EA- This EA encompass approximately 4,097 acres of land on the eastside of Ward Mt. adjacent to the Ward Mountain Restoration Plan project area. The Lowry Hazardous Fuels Reduction and Ecosystem Enhancement project includes vegetative treatments similar to those proposed within the proposed action.

The Cumulative Effects Analysis (CEA) is displayed on Figure 8 and represents the resources discussed below unless specified otherwise.

- Livestock grazing would continue as an approved use of both Forest Service and BLM lands within the project area into the foreseeable future. NEPA analysis is either completed or ongoing on BLM range allotments within the cumulative

effects area (CESA). In addition, the Ely Resource Management Plan (August 2008) provides guidance for Livestock Grazing (pgs 85-88). Range improvements would be maintained in conformance with BLM standards. At this time, there are no new range improvements proposed within the project area.

## *1. Air Quality*

The concurrent implementation of the South Steptoe Valley Watershed Restoration Plan would implement similar treatments within the same time frame as the Ward Mountain Restoration Project. Compliance with the specified design features within both projects would be sufficient to mitigate any potential cumulative impacts to air quality. There would be no cumulative impacts as a result of the no action alternative.

## *2. Cultural Resources*

The area of potential effect (APE) the cultural and historical resource values would be the effects which result from the incremental impacts of actions in this EA when added to other past, present and reasonably foreseeable actions. Presently the South Steptoe Watershed Restoration Plan has treatments proposed adjacent to the Ward Mountain Restoration Project and the Lowry Hazardous Fuels Reduction and Ecosystem Enhancement project within the Ward Mountain Restoration Project are within Steptoe Valley. Mitigation measures identified within both of the proposed actions would minimize the direct and indirect impacts of the treatments to cultural resources. The overall cumulative impacts from all past, present and future actions are expected to be minimal.

Wildfires are the greatest threat for the entire composite of cultural resources (both fire sensitive and non-fire sensitive type sites) within and immediately adjacent to the project area. Implementation of the proposed action would reduce these threats of future wildfires. The inevitable vegetative changes could adversely impact cultural resources on a site-specific basis as pinyon and juniper increases and sagebrush/grass communities are reduced. The potential exists for future wildfire events to occur, such as 2012 Egan Fire that consumed 7,190 acres located just south of the present APE; although it cannot be determined at this time how many could occur or the acres this could effect. There would be no cumulative impacts as a result of the no action alternative.



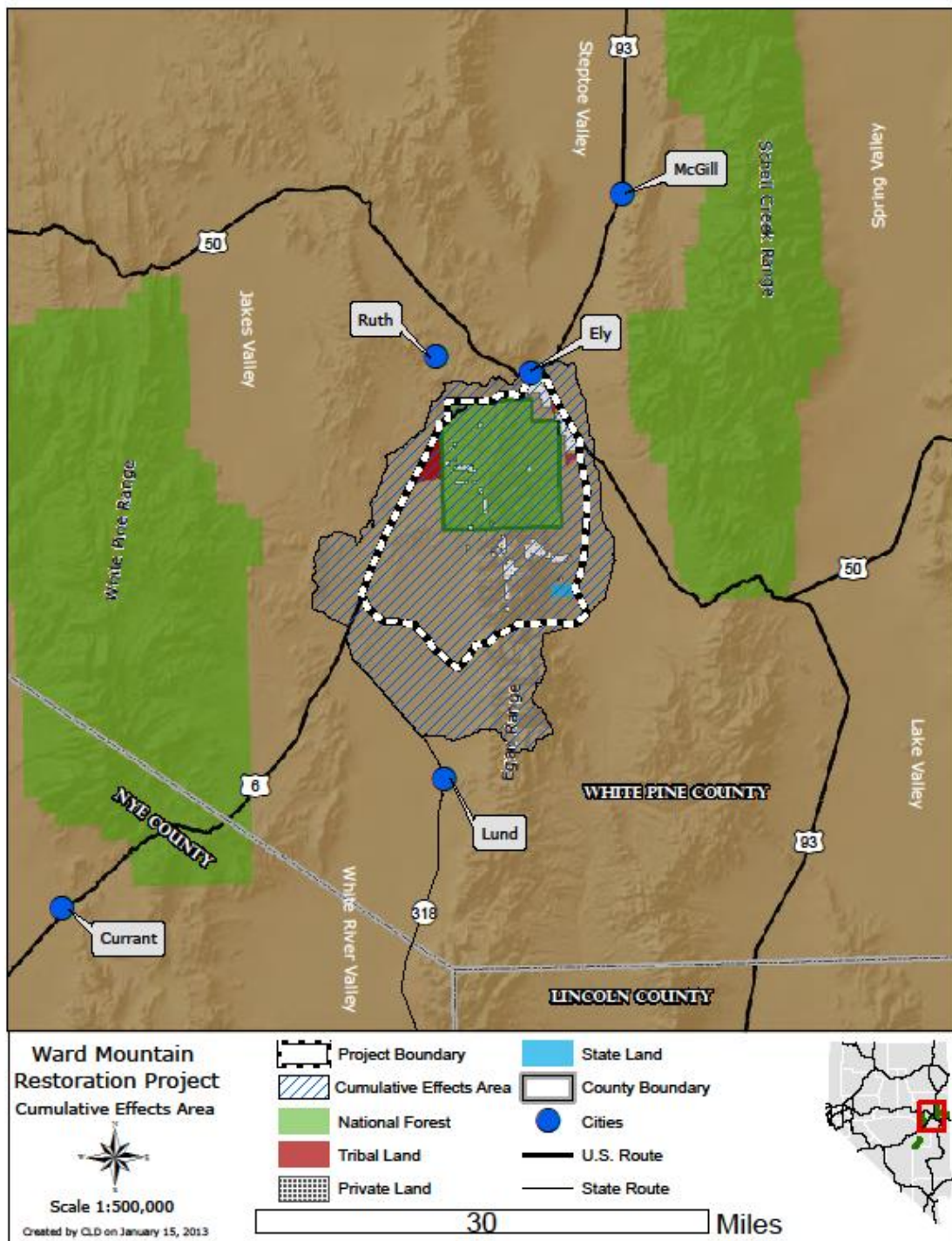


Figure 8 – Ward Mountain Restoration Project Cumulative Effects Study Area

### 3. *Inventoried Roadless Areas*

There are no RFFAs that are currently proposed within the project area that would contribute cumulatively to the direct and indirect impacts of either the proposed action or no action alternative as analyzed to IRAs.

### 4. *Lands with Wilderness Characteristics*

There are no RFFAs that are currently proposed within the project area that would contribute cumulatively to the direct and indirect impacts of either the proposed action or no action alternative as analyzed to Lands with Wilderness Characteristics.

### 5. *Fish and Wildlife*

#### a) Big Game

The CESA for big game is hunt unit 221 and a small portion of unit 131 which encompasses the Egan Range to the basins of White River Valley to the west and Steptoe Valley to the east (Figure 8). The cumulative effects from the South Steptoe Watershed Restoration and Lowry Hazardous Fuels Reduction and Ecosystem Enhancement projects would cause additional temporary disturbances to big game while restoration projects are being implemented within the CEA/CESA; however treatments are expected to span over multiple years and would be spatially and temporarily distributed. Additionally, restoration treatments within the CESA would benefit big game by improving habitat quality and quantity. Past actions: two big game guzzlers on Ward Mountain.

There are no RFFAs that are currently proposed within the project area that would contribute cumulatively to the direct and indirect impacts of either the proposed action or no action alternative as analyzed to big game.

#### b) Migratory Birds

The South Steptoe Valley Watershed Restoration Plan would have similar effects upon Migratory Birds. Design features incorporated into the Ward Mountain Restoration Plan as well as the South Steptoe Valley Watershed Restoration Plan and Lowry Hazardous Fuels Reduction and Ecosystem Enhancement EA would mitigate any potential cumulative impacts to migratory birds.

There are no RFFAs that are currently proposed within the project area that would contribute cumulatively to the direct and indirect impacts of either the proposed action or no action alternative as analyzed to migratory birds.

c) Special Status – Greater Sage-grouse

The CESA for greater sage-grouse is the same as the big game CESA but ends at the White Pine County line to the south. The cumulative effects from the South Steptoe Watershed Restoration and Lowry Hazardous Fuels Reduction and Ecosystem Enhancement projects would cause additional temporary disturbances to greater sage-grouse while restoration projects are being implemented within the CESA; however treatments are expected to span over multiple years and would be spatially and temporarily distributed. Timing stipulations and design features were incorporated into the restoration projects to minimize disturbance to greater sage-grouse. Restoration treatments within the CESA would benefit greater sage-grouse by reducing tree establishment into nesting and brood-rearing habitat and increasing the herbaceous understory in sagebrush communities. The Nevada and Northeastern California Greater Sage-Grouse Draft Land Use Plan and EIS (2013) would implement additional conservation measures to protect greater sage-grouse and their habitat. There would be no cumulative impacts as a result of the no action alternative.

d) *Special Status – Pygmy Rabbit*

The CESA for pygmy rabbits includes big sagebrush communities established on deep loamy soils within the CESA boundary. Design features included within the Ward Mountain Restoration Project proposed action as well as the South Steptoe Watershed Restoration Plan and Lowry Hazardous Fuels Reduction and Ecosystem Enhancement EA would mitigate any potential cumulative impacts to pygmy rabbits. There would be no cumulative impacts as a result of the no action alternative.

## 6. *Fire and Fuels Management*

The Ely District BLM is in the process of systematically evaluating watersheds within the district. As watersheds are evaluated restoration plans are being prepared to restore vegetative communities closer to the desired future condition. As more watersheds are evaluated, plans are completed and implementation of the plans occurs, the landscape of the Ely district would progress towards the desired future condition. This trend would gradually improve the departure of vegetation thereby reducing the risk of losing key ecosystem components as a result of wildland fire occurring beyond the historic fire regime.

Under the no action alternative the Ward Mountain Restoration project area would not be treated and therefore the departure of the vegetation as well as the historical disturbance

regime could continue to increase. Watersheds surrounding the Ward Mountain Restoration project area would continue to be evaluated and potentially treated. There would be no cumulative impacts as a result of the no action alternative.

Past and present actions; over the past 3 years several mastication treatments were completed on the eastside of Ward Mt. between Lowry Canyon and Sawmill Canyon on FS lands. Approximately 1,500 acres completed.

BLM has completed approximately 2,385 acres of mechanical. 299 acres were treated with prescribed fire and fire rehabilitation throughout the CESA.

## **7. *Noxious and Invasive Weeds***

The combination of the continuation of current land uses with the proposed disturbances as a result of the proposed action has the potential to create additional vectors for noxious and invasive weeds. Design features as proposed and incorporated within the Weed Risk Assessment (Appendix A) would be expected to mitigate these potential impacts. Long term stabilization of the treated areas through reducing departure, increasing plant diversity and vigor and restoring wildland fire to closer to the historical fire regime would further increase resilience of the area to noxious and invasive weeds. There would be no anticipated cumulative impacts as a result of the no action alternative.

Past and present actions; for the past couple of years on FS/BLM lands there have been inventories and treatment of weeds throughout the proposed project area.

## **8. *Recreation***

Design features incorporated within the South Steptoe Valley Watershed Restoration Plan and the Ward Mountain Restoration Project would sufficiently mitigate any potential cumulative impacts to the direct and indirect impacts as analyzed to recreation. There would be no anticipated cumulative impacts as a result of the no action alternative.

Past and present actions; in 2013, the Ward Mtn. Recreation Site renovation project was completed.

## **9. *Soils and Water***

Design features incorporated within the South Steptoe Valley Watershed Restoration Plan and the Ward Mountain Restoration Project would sufficiently mitigate any potential cumulative impacts to the direct and indirect impacts as analyzed in regards to soil and

water resources. There would be no anticipated cumulative impacts as a result of the no action alternative.

## 10. *Vegetation*

The South Steptoe Valley Watershed Restoration Plan incorporates all lands within the South Steptoe Valley Watershed and the Lowry Hazardous Fuels Reduction and Ecosystem Enhancement Project. Projects identified within these plans are substantially similar to those proposed within the Ward Mountain Restoration Project. The accomplishment of the objectives of both of these projects would cumulatively result in large landscape areas being closer to the natural range of variability as identified within the respective biophysical setting models. The accomplishment of the objectives over the landscape would result in a reduced risk of losing key ecosystem components and an environment where natural disturbances could be allowed to play a more natural role. The resulting vegetative communities would be more resilient to site conversions as a result of disturbances.

Under the no action alternative the Ward Mountain Restoration project area would not be treated and therefore the departure of the vegetation as well as the historical disturbance regime could continue to increase. Vegetation would move further away from the desired future condition as prescribed in the agencies respective management plans. There would be no anticipated cumulative impacts as a result of the no action alternative.

There will be no impacts associated with treatment methods for the sensitive plant species and is not likely to result in a trend to federal listing or loss of viability for the populations of these species. No individuals were located within project area. There would be no anticipated cumulative impacts as a result of the no action alternative.

Past and present actions; (FS) within the Lowry project area located on the eastside of Ward Mt. approximately 1,500 acres of mastication has been completed. Cut and girdled conifers within 130 acres of aspens. BLM has completed over 13,774 acres of mechanical, prescribed fire and seedings. Both agencies have chaining, railings, other seedings, prescribed fire and Dixie harrowing that go as far back as the 1950's.

## 11. *Visual Resource Management*

Design features incorporated within the South Steptoe Valley Watershed Restoration Plan and the Ward Mountain Restoration Project would sufficiently mitigate any potential

cumulative impacts to visual resources. There would be no cumulative impacts to visual resources as a result of the no action alternative.

## **12. *Livestock Grazing***

Implementation of the mitigation measures found within the South Steptoe Valley Watershed Restoration Plan and the Ward Mountain Restoration Project would mitigate any potential cumulative impacts as a result of livestock grazing. Impacts of the mitigation measures upon permittees would be mitigated as project implementation and subsequent rest periods would be coordinated with the permittees to minimize impacts to the greatest extent practical. There would be no anticipated cumulative impacts as a result of the no action alternative.

## **13. *Climate Change***

The Proposed Action incorporates several vegetation treatments targeted at reducing dense fuel loads and moving vegetation closer to the desired future condition. This conversion in vegetation to communities and representative seral states would be more resilient to a variety of disturbance factors including climate change. With the treatment of the South Steptoe Valley Watershed the impacts discussed within the direct and indirect impacts analysis would occur not only within the Ward Mountain Restoration project area but adjacent areas as well. These treatments collectively would result in a larger landscape that would be closer to the desired future condition and less vulnerable to the effects of climate change.

## IV. Agencies and Persons Consulted

The agencies used multiple methods to develop the proposed action and determine the major issues of this project. This involved members of the public, interested private groups and the State and local agencies. In June 25 2011 a scoping notice was sent to 167 individuals, groups, agencies and tribes providing an opportunity to comment on the upcoming Environment Assessment being conducted by Ely BLM and the Ely Ranger District. A detailed response to these comments was completed and is located within the project record. See Appendix C for a detailed chronology of scoping.

Tribal consultation has occurred through letter and meeting with the tribes at their respective tribal councils (see Appendix C).

The Ely Shoshone Tribe is participating in the preparation of this document with respect to consultation and treatment of tribal land. There were no concerns raised by any other tribes that have been consulted.

### A. List of Preparers

#### 1. *Forest Service*

Name	Title	Resources
Carol Carlock	Fuels Specialist	Project Lead, Fire and Fuels Management, Vegetative Resources, Forest Resources, VRM Wastes (hazardous and solid)
Nate Millet	Hydrologist	Soil, Air Quality, Water Quality, Water Resources, Floodplains
Amery Sifre	Rangeland Management Specialist	Riparian/Wetlands, Range, Invasive, Non-native plants, Wild Horses and Burros
Eric Stever	Archaeologist	Cultural, Paleontological, Native American and Religious Concerns, Tribal Coordination
Kathy Johnson	Wildlife Biologist	Wildlife, Migratory Birds, Special Status Animals, Special Status Plants
Joshua Simpson	Natural Resource Specialist	Wilderness Values, Recreation, IRA
Jim Winfrey	Planning and Environmental Coordinator	Environmental Justice, Environmental Coordinator/LUP
Deanna Stever	Geologist	Minerals

## 2. *BLM*

Name	Title	Resources
Matt Rajala	Fuels Specialist	Project Lead, Fire and Fuels Management
Ken Vicencio	Rangeland Management Specialist	Soil, Air Quality, Water Quality, Water Resources, Floodplains
Andrea Cox	Rangeland Management Specialist	Range, Invasive Non-Native Species, Vegetative Resources
TJ Maybe	Forester	Riparian/Wetlands, Forest Resources
Kurt Braun	Archaeologist	Cultural, Paleontological, Native American and Religious Concerns, Tribal Coordination
Elvis Wall	Tribal Coordinator	Wildlife, Migratory Birds, Special Status Animals, Special Status Plants
Nancy Herms	Wildlife Biologist	Recreation, VRM
Dave McMullen	Recreation Planner	Wilderness Values, Areas with Wilderness Characteristics
Emily Simpson	Recreation Planner (Wilderness)	Environmental Justice, Environmental Coordinator/LUP
Solomon Odom	Planning and Environmental Coordinator	Minerals
Miles Kreidler	Geologist	ES&R
Erica Husse	ES&R Coordinator	Wastes (Hazardous & Solid)
Randy Johnson	Haz Mat Coordinator	Lands
Cindy Longinetti	Lands	Wild Horse and Burros
Ben Noyes	WH&B Specialist	

## 3. *Ely Shoshone Tribe*

Michael Dalton	Grants Writer/Planner	Ely Shoshone Tribal
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## **APPENDIX A**

### **RISK ASSESSMENT FOR NOXIOUS & INVASIVE WEEDS**

#### **Ward Mountain Restoration Project**

#### **White Pine County, Nevada**

The proposed action is to reduce the ecological departure of the Ward Mountain planning area. An ecological assessment of the Ward Mountain area was performed The Nature Conservancy (TNC) in 2009 and 2010. From this assessment, TNC provided the BLM and FS a recommended plan of action that would best respond to the ecological departure given social, economic and physical limitations. That recommended plan of action has been brought forward as the proposed action. The proposed action includes a suite of treatments across the landscape. Treatments include:

- Prescribed Fire
- Mechanical tree removal
- Herbicide application to control weeds
- Herbicide application to reduce densities of sagebrush and PJ
- Mastication
- Chaining
- Fencing
- Hand thinning (PJ and mixed conifer/aspen)
- mowing

No field weed surveys were completed for this project. Instead the Ely District weed inventory data were consulted. Below is a list of species that are documented within or adjacent to the project area (Units 6, 7, 9, 10, 11, and 14 are entirely within the USFS boundary and are not covered in this Risk Assessment):

<b>UNIT 1</b>	<i>Acroptilon repens</i>	Russian knapweed
	<i>Centaurea stoebe</i>	Spotted knapweed
	<i>Cirsium arvense</i>	Canada thistle
	<i>Cirsium vulgare</i>	Bull thistle
	<i>Lepidium draba</i>	Hoary cress
	<i>Lepidium latifolium</i>	Tall whitetop
	<i>Linaria vulgaris</i>	Yellow toadflax
	<i>Onopordum acanthium</i>	Scotch thistle
<b>UNIT 2</b>	<i>Centaurea stoebe</i>	Spotted knapweed
<b>UNIT 3</b>	<i>Centaurea stoebe</i>	Spotted knapweed
	<i>Lepidium draba</i>	Hoary cress
<b>UNIT 4</b>	<i>Centaurea stoebe</i>	Spotted knapweed
	<i>Lepidium draba</i>	Hoary cress
<b>UNIT 5</b>	<i>Centaurea stoebe</i>	Spotted knapweed
	<i>Cirsium vulgare</i>	Bull thistle
	<i>Lepidium draba</i>	Hoary cress
<b>UNIT 8</b>	<i>Centaurea stoebe</i>	Spotted knapweed
	<i>Cirsium vulgare</i>	Bull thistle
<b>UNIT 12</b>	<i>Centaurea stoebe</i>	Spotted knapweed
	<i>Lepidium draba</i>	Hoary cress
<b>UNIT 13</b>	<i>Acroptilon repens</i>	Russian knapweed
	<i>Centaurea stoebe</i>	Spotted knapweed
	<i>Cirsium arvense</i>	Canada thistle
	<i>Cirsium vulgare</i>	Bull thistle
	<i>Hyoscyamus niger</i>	Black henbane
	<i>Lepidium draba</i>	Hoary cress
	<i>Lepidium latifolium</i>	Tall whitetop
	<i>Onopordum acanthium</i>	Scotch thistle
	<i>Tamarix spp.</i>	Salt cedar
<b>UNIT 15</b>	<i>Cirsium vulgare</i>	Bull thistle
<b>UNIT 16</b>	<i>Lepidium draba</i>	Hoary cress
<b>UNIT 17</b>	<i>Cirsium vulgare</i>	Bull thistle

The project area was last inventoried for noxious weeds in 2010. Below is a list of un-inventoried species that may be found within the project boundary:

Bromus tectorum	Cheatgrass
Ceratocephala testiculata	Bur buttercup
Convolvulus arvensis	Field bindweed
Elaeagnus angustifolia	Russian olive
Erodium cicutarium	Filaree
Kochia scoparia	Kochia
Halogeton glomeratus	Halogeton
Marrubium vulgare	Horehound
Salsola kali	Russian thistle
Sysimbrium altissimum	Tumble mustard

**Factor 1 assesses the likelihood of noxious/invasive weed species spreading to the project area.**

None (0)	Noxious/invasive weed species are not located within or adjacent to the project area. Project activity is not likely to result in the establishment of noxious/invasive weed species in the project area.
Low (1-3)	Noxious/invasive weed species are present in the areas adjacent to but not within the project area. Project activities can be implemented and prevent the spread of noxious/invasive weeds into the project area.
Moderate (4-7)	Noxious/invasive weed species located immediately adjacent to or within the project area. Project activities are likely to result in some areas becoming infested with noxious/invasive weed species even when preventative management actions are followed. Control measures are essential to prevent the spread of noxious/invasive weeds within the project area.
High (8-10)	Heavy infestations of noxious/invasive weeds are located within or immediately adjacent to the project area. Project activities, even with preventative management actions, are likely to result in the establishment and spread of noxious/invasive weeds on disturbed sites throughout much of the project area.



UNIT #	RATING	RATIONALE
UNIT 1	7-MODERATE	Small noxious weed infestations are documented throughout the unit, and have a chance of spreading during implementation. Many infestations are also located adjacent to this unit.
UNIT 2	5-MODERATE	Units 2-5 all have known populations of noxious weeds at their borders and adjacent to the project boundary. Very few known infestations stray from the unit boundaries.
UNIT 3		
UNIT 4		
UNIT 5		
UNIT 8	4-MODERATE	Units 8 and 12 have documented infestations that occur only at their unit boundaries.
UNIT 12		
UNIT 13	7-MODERATE	Small noxious weed infestations are documented throughout the unit, and have a chance of spreading during implementation. Many infestations are also located adjacent to this unit.
UNIT 15	2-LOW	Very few infestations are documented adjacent to Units 15 and 16.
UNIT 16		
UNIT 17	2-LOW	Very small infestations of Bull thistle (not a Nevada listed noxious weed) occur within this unit, and are not likely to spread.

**Factor 2 assesses the consequences of noxious/invasive weed establishment in the project area.**

Low to Nonexistent (1-3)	None. No cumulative effects expected.
Moderate (4-7)	Possible adverse effects on site and possible expansion of infestation within the project area. Cumulative effects on native plant communities are likely but limited.
High (8-10)	Obvious adverse effects within the project area and probable expansion of noxious/invasive weed infestations to areas outside the project area. Adverse cumulative effects on native plant communities are probable.

UNIT #	RATING	RATIONALE
UNIT 1	7-MODERATE	Newly established infestations would likely increase noxious weed spread in the area due to the high volume of recreational use.
UNIT 2	4-MODERATE	Newly established infestations could potentially increase noxious weed spread in the area.
UNIT 3		
UNIT 4		
UNIT 5		
UNIT 8	7-MODERATE	Newly established infestations would likely increase noxious weed spread in the area due to the high volume of recreational use.
UNIT 12		
UNIT 13	4-MODERATE	Newly established infestations could potentially increase noxious weed spread in the area.
UNIT 15		
UNIT 16		
UNIT 17		

**The Risk Rating is obtained by multiplying Factor 1 by Factor 2.**

None (0)	Proceed as planned.
Low (1-10)	Proceed as planned. Initiate control treatment on noxious/invasive weed populations that get established in the area.
Moderate (11-49)	Develop preventative management measures for the proposed project to reduce the risk of introduction of spread of noxious/invasive weeds into the area. Preventative management measures should include modifying the project to include seeding the area to occupy disturbed sites with desirable species. Monitor the area for at least 3 consecutive years and provide for control of newly established populations of noxious/invasive weeds and follow-up treatment for previously treated infestations.
High (50-100)	Project must be modified to reduce risk level through preventative management measures, including seeding with desirable species to occupy disturbed site and controlling existing infestations of noxious/invasive weeds prior to project activity. Project must provide at least 5 consecutive years of monitoring. Projects must also provide for control of newly established populations of noxious/invasive weeds and follow-up treatment for previously treated infestations.

UNIT #	RISK RATING	ACTION
UNIT 1	49- MODERATE	Implement preventative management measures for the proposed project to reduce the risk of introduction or spread of undesirable plants into the area. Monitor the area for at least 3 consecutive years and provide for control of new infestations.
UNIT 2	20- MODERATE	
UNIT 3		
UNIT 4		
UNIT 5		
UNIT 8	16- MODERATE	
UNIT 12	28- MODERATE	
UNIT 13	49- MODERATE	
UNIT 15	8-LOW	
UNIT 16		
UNIT 17		



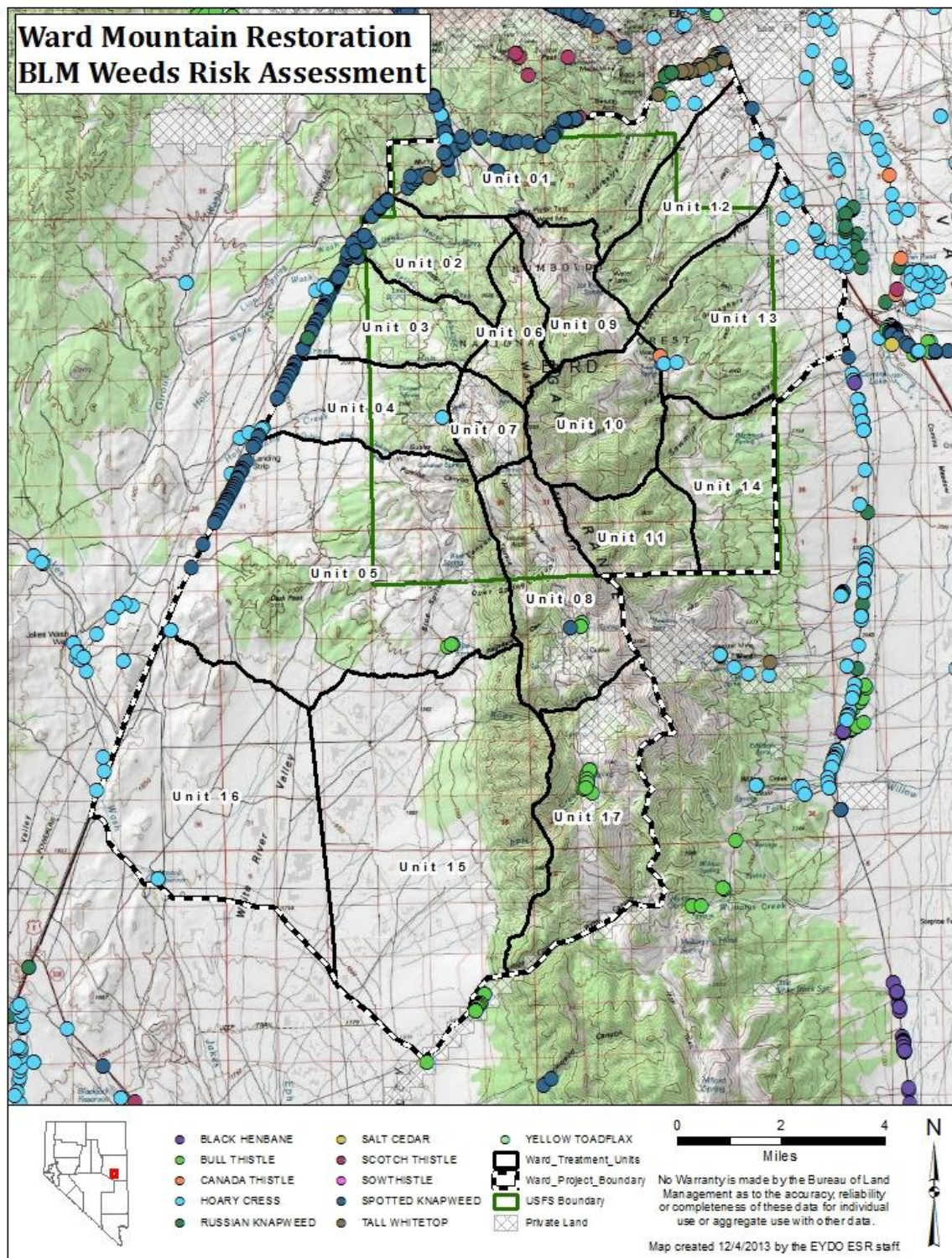
Reviewed by:

12/11/2013

Chris McVicars

Date

Ely District Noxious & Invasive Weeds  
Coordinator



## Appendix B

### BLM Special Status Species and FS Sensitive Species that occur or may have the potential to occur within the project area.

Common Name	Scientific Name	BLM	FS
<i>Birds</i>			
Bald eagle	<i>Haliaeetus leucocephalus</i>	X	X
Black rosy-finch	<i>Leucosticte atrata</i>	X	
Brewer's sparrow	<i>Spizella breweri</i>	X	
Ferruginous hawk	<i>Accipiter gentilis</i>	X	
Flammulated owl	<i>Otus flammeolus</i>		X
Golden eagle	<i>Aquila chrysaetos</i>	X	
Greater sage-grouse	<i>Centrocercus urophasianus</i>	X	X
Loggerhead shrike	<i>Lanius ludovicianus</i>	X	
Northern goshawk	<i>Accipiter gentiles</i>		X
Peregrine falcon	<i>Falco peregrinus</i>	X	X
Pinyon jay	<i>Gymnorhinus cyanocephalus</i>	X	
Sage thrasher	<i>Oreoscoptes montanus</i>	X	
Western burrowing owl	<i>Athene cunicularia hypugaea</i>	X	
<i>Mammals</i>			
Big brown bat	<i>Eptesicus fuscus</i>	X	
Brazilian free-tailed bat	<i>Tadarida brasiliensis</i>	X	
California myotis	<i>Myotis californicus</i>	X	
Fringed myotis	<i>Myotis thysanodes</i>	X	
Hoary bat	<i>Lasiurus cinereus</i>	X	
Little brown myotis	<i>Myotis lucifugus</i>	X	
Long-eared myotis	<i>Myotis evotis</i>	X	
Long-legged myotis	<i>Myotis volans</i>	X	
Pygmy rabbit	<i>Brachylagus idahoensis</i>	X	X
Silver-haired bat	<i>Lasionycteris noctivagans</i>	X	
Spotted bat	<i>Euderma maculatum</i>	X	X
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	X	X
Western pipistrelle	<i>Pipistrellus hesperus</i>	X	
Western red bat	<i>Lasiurus blossevillii</i>	X	
Western small-footed myotis	<i>Myotis ciliolabrum</i>	X	
<i>Reptiles</i>			
Sonoran mountain kingsnake	<i>Lampropeltis pyromelana</i>	X	
<i>Insects</i>			
White River wood nymph	<i>Cercyonis pegala pluvialis</i>	X	
<i>Plants</i>			
Pennell beardtongue	<i>Penstemon leiophyllus</i> var. <i>Francisci-</i>	X	



## APPENDIX C

### Ward Mountain Restoration Project Public Involvement History

- Annual updates on this project were presented to potentially affected permittees from 2009 to present.
- Brief updates on this project were presented at 12 Tri County (White Pine, Nye, and Lincoln) meetings between 2009 and present.
- Brief updates on this project were presented at 10 Coordinated Resource Management (CRM) meetings between 2009 and present.
- Brief updates on this project were presented at 7 White Pine County Water Advisory Committee meetings between 2009 and present.
- Brief updates on this project were presented at 6 Public Land Use Advisory Committee (PLUAC) meetings between 2009 and present.
- On February 22, 2010 District Ranger Noriega and Archeologist Eric Stever went to Duckwater to attend a tribal council meeting. The meeting was cancelled due to a lack of a quorum. A summary of projects including this project was provided to the office to share with the tribal council.
- On May 10, 2010 a letter was sent to the Duckwater Tribe, Ely Shoshone Tribe and the Goshute Tribe providing an update on the project.
- On June 9, 2010 an update on this project was provided to the White Pine County Commission.
- On July 30, 2010 the details of this project were presented during testimony before the Nevada Legislative Committee on Public Lands in Ely, Nevada.
- On February 28, 2011 an update on this project was given to the Duckwater Tribal Council during their regularly scheduled meeting.
- On March 4, 2011 a brief update on this project was provided to Kevin Kirkeby, Rural Representative for Senator John Ensign.
- On April 1, 2011 an update on this project was given to the Goshute Tribal Council during their regularly scheduled meeting.
- On April 2, 2011 a brief update on this project was presented during the Eastern Nevada Landscape Coalition Board meeting.
- On April 6, 2011 an update on this project was provided to potentially affected Outfitter & Guide permit holders at the annual meeting.
- On April 12, 2011 District archeologist Eric Stever provided a written summary of various projects on the District to the Ely Shoshone Tribal Council during their regularly scheduled meeting.
- On May 23, 2011 an update on this project was given to the Ely Shoshone Tribal Council during their regularly scheduled meeting.

- On May 31, 2011 an update on this project was given to the Duckwater Tribal Council during their regularly scheduled meeting.
- In June 25 2011 a scoping notice was sent to 167 individuals, groups, agencies and tribes providing an opportunity to comment on the upcoming Environment Assessment being conducted by Ely BLM and the Ely Ranger District. A detailed response to these comments was completed and is located within the project record.
- On June 2011 a legal notice requesting public comments was published in the Ely Times Newspaper.
- On June 27, 2011 an update on this project was given to the Duckwater Tribal Council during their regularly scheduled meeting.
- On December 27, 2011 an update on this project was given to the Duckwater Tribal Council during their regularly scheduled meeting.
- January 6, 2012 an update on this project was given to the Goshute Tribal Council during their regularly scheduled meeting.